REGIONAL QUARTERS RENTAL SURVEY

COVERING
GOVERNMENT-FURNISHED QUARTERS
LOCATED IN

PLAINS SURVEY REGION

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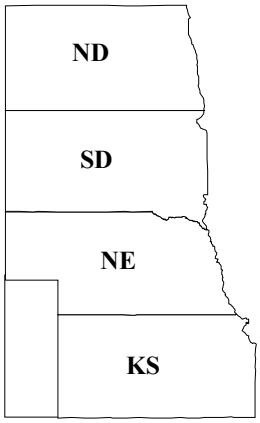

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I. SURVEY BACKGROUND

The Quarters Management and Information Systems (QMIS) Office coordinated a contractor-conducted field survey of the private rental housing market in the states of Colorado, Kansas, Nebraska, North Dakota, and South Dakota, from May 2002 through July 2002. This survey was undertaken as specified in the Office of Management and Budget (OMB) Circular No. A-45, and the U.S. Department of the Interior's Departmental Quarters Handbook. OMB Circular A-45 provides for reconfirmation of the market based rental rates at least once every five years, or sooner, if conditions warrant.

The collection and analysis of rental housing data were accomplished employing methods similar to those used in previous surveys. Automated and manual analytical procedures were used to establish base rental rates for houses (including plexes), apartments, mobile homes, and trailer spaces. Rental rates for cabins were established based upon their comparability with 1-bedroom houses. Rental rates for temporary housing and travel trailers were established based upon their comparability with mobile homes. Rental rates for dormitories, bunkhouses and transient quarters were established by extending the principle of comparability, as provided for in OMB Circular A-45.

The objective of regional surveys, as set forth in OMB Circular No. A-45, is to develop reasonable rental rates based upon the ". . . typical rental rates for comparable private housing in the general area in which the Government quarters are located . . .." The policy set forth in OMB Circular A-45 is as follows:

> Rental rates and charges for Government quarters and related facilities will be based upon their "reasonable value...to the employee...in the circumstances under which the quarters and facilities are provided, occupied, or made available."...reasonable value to the employee or other occupant is determined by the rule of equivalence; namely, that charges for rent and related facilities should be set at levels equal to those prevailing for comparable private housing located in the same area, when practicable...

The regional survey method uses regression analysis techniques to establish a base rental rate for a given type of quarters that reflects the typical rate for that type of housing in the survey area. Regression analysis allows the QMIS Program Office to establish adjustments that reflect: (1) the contributory value (+ or -) of housing features that the private rental market indicates are significant; and (2) relevant social and economic factors that are manifested in the rent levels of individual communities.

Because regression analysis permits assessment of (and adjustment for) different locations, as measured by market rents, several localities or states can be surveyed at a time to minimize data collection costs and the rates can be individualized for communities significantly at variance with the regional rent pattern.

The resulting product (finalized rental rates), when derived from carefully applied automated statistical analysis, provides a logical and equitable base rental rate structure supported by the market rental rate pattern of the region and the community.

II. INVENTORY OF GOVERNMENT-FURNISHED QUARTERS

This survey was initiated with an inventory of Government-furnished quarters (GFQ) managed by the agencies and bureaus that participate in the QMIS program.

Most agencies and bureaus are now using the QMIS database software to manage their inventories. The QMIS Program Office in Denver developed this software. The database software allows an installation or region to maintain its own housing inventory. Rents can be calculated in just minutes, even for hundreds of quarters. This decentralized system provides local control of the housing inventory. As always, the key to accurate rents is accurate, up-to-date inventory information. Software with the new housing rental rate formulas and new utility rates is distributed from Denver whenever new regional surveys are conducted or at CPI time. If you do not receive new CPI software by approximately January 1st of each year, please contact the QMIS Program Office (303-969-7240). It is important that all agencies and bureaus submit (on diskettes or via electronic mail) updates to their housing inventories at least once a year. This information is used to determine the communities and characteristics to be sampled in new Regional Surveys. The information is also used for various general management reports.

III. CONTRACTING FOR THE PRIVATE RENTAL SURVEY

A. DETERMINATION OF THE COMMUNITIES TO BE SURVEYED

Selection of the communities to be surveyed was initiated with a review of the nearest established communities identified in the quarters inventory process. Their geographic locations and populations were determined to enable selection of established communities nearest to concentrations of Government housing.

Inclusion of these communities enables a comparison of the community rental rate structure with that of the survey region. This permits a ready determination of whether the local or the regional rental rate structure should be utilized to establish the GFQ base rents. A complete discussion of this process is contained in section IV of this report.

The communities surveyed represented broad geographic and population ranges. The largest community surveyed, Lincoln, NE, had a 2000 population of 225,581. The smallest community, Cavalier, ND, had a population of 1,537. A list of the surveyed communities appears as Table 1. In accordance with OMB Circular A-45, communities with 2000 census populations below 1,500 were not analyzed.

TABLE 1 COMMUNITIES SURVEYED

STATE AND COMMUNITY	2000 CENSUS POPULATION
COLORADO	
Burlington, CO	3,678
KANSAS	
Beloit, KS	4,019
Great Bend, KS	15,345
Learned, KS	4,236
Leavenworth, KS	68,691
Phillipsburg, KS	2,668
Stockton, KS	1,558
Topeka, KS	122,377
Wakeeney, KS	1,924
NEBRASKA	
Alliance, NE	8,959
Beatrice, NE	12,496
Broken Bow, NE	3,491
Gering, NE	7,751
Gordon, NE	1,756
Grand Island, NE	42,940
Imperial, NE	1,982
Lincoln, NE	225,581
McCook, NE	7,994
Mitchell, NE	1,831
S Sioux City, NE	11,925
Superior, NE	2,055
Valentine, NE	2,820
NORTH DAKOTA	
Bismark, ND	55,532
Bottineau, ND	2,336
Carrington, ND	2,268
Cavalier, ND	1,537
Devils Lake, ND	7,222

TABLE 1 COMMUNITIES SURVEYED

STATE AND COMMUNITY	2000 CENSUS POPULATION
NORTH DAKOTA	
Dickinson, ND	16,010
Fargo, ND	90,599
Hazen, ND	2,457
Jamestown, ND	15,527
Langdon, ND	2,101
Mandan, ND	16,718
Minot, ND	36,567
Oakes, ND	1,979
Valley City, ND	6,826
Wahpeton, ND	8,586
Williston, ND	12,512
SOUTH DAKOTA	
Aberdeen, SD	24,658
Belle Fourche, SD	4,565
Chamberlain, SD	2,338
Custer, SD	1,860
Flandreau, SD	2,376
Hot Springs, SD	4,129
Mitchell, SD	14,558
Mobridge, SD	3,574
Pierre, SD	13,876
Rapid City, SD	59,607
Sisseton, SD	2,572
Sturgis, SD	6,442
Webster, SD	1,952
Yankton, SD	13,528

B. DETERMINATION OF THE HOUSING CLASSES TO BE SURVEYED

In order to determine which housing classes to survey, the inventory data for the agencies participating in the QMIS system were separated into housing classes shown in Table 2, below. Analysis of the data revealed the following numbers of units per housing class:

TABLE 2 GOVERNMENT-FURNISHED QUARTERS - (BY HOUSING CLASS)

Housing Class	# of Units	Avg Age	Age Range	Avg. SQFT	SQFT Range
Houses					
4+ Bedrooms	34	52	(29 – 107)	2,255	(1,060 – 6,026)
3 Bedrooms	579	43	(10 – 99)	1,286	(888 – 3,986)
2 Bedrooms	462	48	(10 – 132)	1,032	(617 – 3,848)
1 Bedroom	174	43	(14 – 96)	658	(230 – 1,547)
Apartments					
3+ Bedrooms	0	0	(0 – 0)	0	(0 – 0)
2 Bedrooms	26	48	(23 – 76)	833	(555 – 1,548)
1 Bedroom	86	40	(15 – 72)	629	(330 – 1,168)
Efficiency	40	44	(28 - 72)	406	(207 – 552)
Cabins	5	65	(63 – 69)	467	(384 – 513)
Temporary	8				
Mobile Homes					
4+ Bedrooms	0	0	(0 – 0)	0	(0 – 0)
3 Bedrooms	9	30	(20 – 38)	1,050	(750 – 1,300)
2 Bedrooms	5	30	(20 – 38)	865	(600 – 1,100)
1 Bedroom	0	0	(0 – 0)	0	(0 – 0)
Travel Trailers	3	31	(15 – 53)	364	(112 – 974)
Dormitories	18	58	(25 – 73)	829	(225 – 2,400)
Trailer Pads	20				
TOTAL UNITS	1,469				

As with other regional surveys, the contractor was directed to survey only those housing classes for which a representative sample could be readily obtained in the private rental market. Thus, comparables were not obtained for cabins or lookouts, temporary housing, travel trailers, bunkhouses/dormitories, transient quarters or tents.

Rental rates for cabins were established by using the average rental rate for one-bedroom, single-family houses as the basis of comparison. Additional adjustments, that reflect the absence of certain standard housing features in some cabins, have been included for use when appropriate.

Since temporary housing and travel trailers (mobile home-like structures containing less than 256 square feet of gross living area) are most structurally similar to mobile homes, the rental charges for these housing classes are based upon the analysis of mobile home market rental comparables.

Since comparable bunkhouse or dormitory housing does not exist in most communities, the QMIS Program Office is unable to obtain sufficient market data to provide a satisfactory statistical base. Consequently, rental rates for bunkhouses and dormitories have been established using an extension of the Principle of Comparability, as permitted in OMB Circular A-45. Similarly, the rental charge for transient quarters has been established in conjunction with the dormitory rate structure.

OMB Circular A-45, revised October 20, 1993, excludes tents from the definition of Government-furnished quarters. Therefore, rental charges have not been established (and should not be assessed) for tents which are used as employee housing.

Four housing classes (houses/plexes, apartments, mobile homes and trailer spaces) were ultimately selected for field survey and computer analysis. The contractor was instructed to select comparables, built to Housing and Urban Development (HUD) minimum housing standards, wherever possible. The number of observations obtained for each housing class in each community surveyed varied depending upon the number of nearby Government quarters of that class. The inventory data for each of the housing classes was analyzed to determine frequencies and age and size ranges for major construction elements. The information in Table 2 was used to guide the contractor in the conduct of the survey.

C. HEATING FUELS AND UTILITY CHARGE SURVEY

To ensure reliability of the energy consumption estimates for housing where consumption is neither metered nor measured, this report uses a series of contractor-developed heating and cooling consumption tables for each general type of housing represented in the survey. The tables are based upon energy consumption studies that use a methodology meeting housing industry standards. The results reflect energy consumption for variously sized single-family houses (with and without basements), apartments, and mobile homes. A complete discussion of the energy consumption/cost methodology is contained in Section VI.

D. CONTRACTOR SELECTION

The National Business Center, Products and Services provided procurement support and project coordination for this Private Rental Survey. Reimbursement for survey expenses was underwritten by the agencies and bureaus that participate in the Quarters Management Program.

The private rental survey was completed by Delta-21 Resources Inc. of Oak Ridge, TN, during the months of May 2002 through July 2002. A total of 1,019 private rental housing comparables were sampled. In addition, electrical, heating fuel, utility, appliance, and other related service charges were collected in each of the communities surveyed. The private rental housing costs that were obtained reflected current rental costs and required no adjustment for time.

IV. REGIONAL SURVEY PRINCIPLES AND PROCEDURES

A. SURVEY PRINCIPLES

The purpose of a regional survey is to determine and establish reasonable quarters rents, through an analysis of the market rents of comparable private housing in established communities nearest to concentrations of Government housing. The process of arriving at the base rent of a structure is influenced by real estate appraisal principles, statistical limitations, and administrative considerations. Often there may be a conflict among these three interests, which necessitates a trade-off.

1. Real estate appraisal principles include matching comparables as closely as possible to the specific subject properties in physical characteristics and location, and adjusting in a logical direction for all significant differences.

2. Statistical principles involve: (a) trying to minimize the standard error of the estimate (unexplained variation); (b) getting a good match of characteristics between the properties analyzed and those the analysis is applied to; (c) obtaining a large and diverse sample; and (d) making adjustments for factors that are significant in explaining variation. Ideal samples may not always be available in the market; and the market search may be limited (like an appraisal) because of time and budget constraints.

3. Administrative considerations recognize that Government housing is usually not located in established communities, and that physical characteristics (such as in historical houses, one-room cabins, lookouts or dormitories) are difficult to match in the market. Government quarters are often found in areas influenced by tourism or boom/bust natural resource development that may produce unreasonable rents. Consistency and relative reasonableness, as well as time and budget constraints must also be taken into consideration.

4. While trade-offs among these three considerations may result in a less than ideal application of any one of the three principles, the goal is still to produce "reasonable" Monthly Base Rental Rates (MBRR) for quarters that are relatively consistent with the local market rents for similar housing, internally consistent and logical from one unit to another, and represent reasonable value to the employee.

B. MULTIPLE REGRESSION PROCEDURES USED IN RENTAL RATE COMPUTATIONS

There are several reasons for using the regional survey method to arrive at quarters rental rates. These include accuracy, consistency, fairness, cost effectiveness/economy, and the provision in OMB Circular A-45, that regional surveys are the preferred method.

Prior to the use of the regional survey method, quarters Monthly Base Rental Rates (MBRR's) were reset every five years by individually appraising each quarters unit. The appraisal process normally relied upon the use of a small number (2-4) of comparables for each subject Government quarters unit and made logical or market abstracted adjustments to each comparable. In many instances the same comparables were used to establish rental rates for several quarters. Thus the selection of comparables became critical. Individualized appraisals often led to inconsistencies among units in the same area. Many times different agencies, managing similar or identical housing units in the same area, had substantially different rents after analyzing the same rental market. Appraisers valuing several different units using separate sets of comparables and adjustments can also sometimes arrive at rents not logically related to one another. Finally, the appraisal process required a considerable amount of travel, and individualized writing, typing and editing of appraisal reports, which was expensive and very time consuming.

Alternatively, the regional survey method relies upon much larger samples of comparables. These are analyzed, statistically, to objectively determine those factors that are significant in explaining variations in the adjusted rent of each class of comparables. Each class of comparables (houses, apartments and mobile homes) is analyzed separately to determine which locations and physical characteristics are important in explaining the differences in rents among individual rental units and communities. The computer program independently and objectively determines the best set of characteristics (formula) to explain the rental pattern. This formula varies for each survey region and housing class.

The rental rates are based upon an analysis of regional data and local data. The rents in all surveyed communities for each housing class are tested for statistical significance. All significant negative location adjustments are applied to the quarters using that community as their nearest established community. **Positive location (community) adjustments are not applied; so Government housing units near high-rent communities are charged the typical rent for the region as a whole, rather than the typical rent for that high cost location.**

The statistical process used is called forward in-and-out, step-wise multiple regression analysis. It takes all of the variables considered and forms a matrix or grid showing how every variable is related to every other variable (cross-correlation matrix). In this phase of the analysis, significant inventory items relating to the dwelling structure are coded into the computer as variables to be tested for their impact, if any, on rent. The variable to be explained (in this case rent) is called the dependent variable, because its value is determined by that of the other (independent) variables.

In forward in-and-out step-wise multiple regression analysis, the independent variable that explains the most variation in the dependent variable (rent) is selected first by the computer and entered as Step 1. The remaining variation is then recomputed, and the independent variable that explains the largest portion of the remaining variation is selected by the computer and entered as Step 2. As each new variable is added, the

coefficients of all the previously entered variables are recomputed to take into account relationships among the independent variables. If a previously entered variable no longer meets the test of significance, it is removed.

As this procedure uses the variation squared, it is highly sensitive to cases with extreme variations from the norm. Since the purpose of a regional survey is to find the typical rent for housing with certain characteristics, it is useful (and mandatory) to cull comparables with unusually high or low rents that are apparently unrelated to their characteristics. Such non-conforming rentals tend to obscure the typical pattern. To accomplish this culling, the following steps are normally taken.

Step 1. A listing of all the comparables is checked to see that the program has proper decodes, that no rental has been entered twice, and that the data is complete for each variable to be tested. The range for each rent class is also checked.

Step 2. Regression Run 1 (square foot base formula): The purified data base is analyzed for the best fit of adjusted rent versus square feet and the logarithm of square feet. This comparison is undertaken because square footage in buildings is generally the variable that explains the most variation of adjusted rent. It is also a universal variable (one that applies to all cases) and a continuous variable (one that changes in many small increments).

Step 3. A listing is produced which shows by community the rent/predicted rent ratio of each private rental sample. The predicted rent is one computed using the square foot base formula derived in step 2. The purpose of this listing is to screen out individual rentals whose ratios are far out of line relative to other rental comparables in the same community.

Step 4. A scattergram of rentals for each class, showing adjusted rent by square feet, is produced to visually display the data. These scattergrams, and the listings produced in Step 3, above, are used to remove samples with unusually high or low rents in each size grouping. A separate variable for each of the remaining communities is then entered into the next step, the full regression analysis, to see if it has a statistically significant location adjustment after other adjustments have been made. This run and a crosstab run of physical features allows for selection of other variables that are significantly represented and widely (geographically) distributed. These variables are turned into dummy (yes/no) and combination variables. Continuous and discrete variables are entered as simple variables, logarithmic transformations, and in logical combinations.

Step 5. (First Full Regression Run). The screened samples for each housing class to be analyzed, along with the variables to be tested, are analyzed to find coefficients for the significant variables. The results are checked for logic and cross-correlation; normally only one form of a variable is allowed to stay in the equation. Variables with illogical results are checked to find reasons for such deviation from expected results. Such variables are normally dropped from subsequent regression runs. Sometimes the samples containing such variables are culled; however, that action (culling samples) is uncommon.

Step 6. (Other Full Regression Runs). The full regression analysis is rerun without the illogical variables and/or dropped cases. If the end results look reasonable, the coefficients determined by regression analysis are used to compute Monthly Base Rental Rates (MBRR's) for individual Government-furnished quarters.

Step 7. (Predicted Rent Tables). The coefficients of each satisfactory regression run are put into a computer program which produces a table of predicted quarters MBRR's. The base values and all possible combinations of adjustments are reviewed to ensure the results are reliable for the full range of values. If not, the cause of the problem is diagnosed and corrected, and the regression analysis is rerun, producing a revised set of coefficients. Then Step 6 is repeated, and a new set of rent tables is produced.

V. ESTABLISHMENT OF MONTHLY BASE RENTAL RATES (MBRR)

A. USE OF BASE RENT CHARTS

Although rental computations have been automated, producing Monthly Base Rental Rates (MBRR's) and final Net Rents for most quarters, housing managers should understand the methodology used in determining the rental rates. Therefore, a set of charts has been prepared to allow the manual computation of the MBRR's for each class of rental housing. The charts have been constructed as size/age tables for the three major categories of housing (houses, apartments and mobile homes). By knowing the gross square feet of the livable area (size), the age, and the housing class of a building being used as quarters, one can determine the base rent from the proper table. The charts also contain columns and/or footnotes of rent adjustments, which modify the rent from the size/age table to produce a MBRR for an individual quarters unit. **The value of one refrigerator and one stove is included in the rents listed in Tables 3a-d, 4a-d and 5a-c.** Therefore, if the Government does not provide a refrigerator or a range in the quarters, the value of each non-provided appliance should be subtracted from the monthly rent. The current values of a refrigerator and range are shown in Table 18 of this report, and may be adjusted annually by the QMIS Program Office to reflect changes in the Consumer Price Index (CPI) which may occur following the issuance of this report. In selecting the appropriate rent table, it is important to remember that the **design of the quarters, not its use, determines its category.** Thus, a house or an apartment unit **designed** to be occupied by an individual or a family, but which is actually used to house unrelated individuals, would be valued by the category for which it was designed to be used, rather than as a bunkhouse/dormitory. Where, however, a structure is not designed for occupancy by an individual, or family, or has been substantially modified to house individuals on a dormitory basis, it would be appropriate to apply bunkhouse/dormitory rates. Thus, an unmodified three-bedroom house with a **planned occupancy** of six unrelated individuals (normally two persons per bedroom) would have a rental rate determined by calculating the rental rate for a three-bedroom house and then dividing that rate by six. This rate would change if the number of **planned** occupants changed. If the house were later **structurally modified** to be used as a bunkhouse/dormitory, the rate then would be the dormitory rate.

Based upon information provided by the contractor, deductions from the monthly contract rental rate of each rental sample were made for the contributory costs of utilities, appliances, furnishings and services, provided and included in the contract rent. No deductions were made for central air conditioners, refrigerators or ranges; however, if a refrigerator or range was missing, the value was added to the adjusted rent. Central air conditioners are valued at their contributory value, if any. The resulting adjusted monthly contract rental rate represents the contributory value of the dwelling structure equipped with a refrigerator and a range.

The establishment of final monthly quarters rental charges for houses, apartments, mobile homes and cabins/lookouts requires the addition of charges for Government-provided utilities, services, appliances and furnishings. Conversely, **deductions** are required for the values of ranges and refrigerators when they are not provided by the Government.

There are a total of eleven rental rate charts: four charts for single-family housing, four charts for apartments, and three charts for mobile homes. Instructions for computing rental rates for cabins, bunkhouses and dormitories, transient quarters and trailer spaces are found in Sections V.E, V.F, V.G and V.H, respectively. Because OMB Circular A-45 excludes tents from the definition of "rental quarters," there is no charge for the provision of tents.

The use of the charts is fairly simple. First, find the chart for the category into which the GFQ fits. Next, round the square feet **down** to the nearest hundreds of square feet. Thus, if a unit has 980 square feet, the row labeled 900 SQFT would be used. Then the age should be rounded **up** to the nearest age increment. If the dwelling at issue was built in 1979, its age would be computed as 2002 (the current year) minus 1979 (the year built). Thus, in this instance, the unit is 2002 - 1979 = 23 years old; and the column headed by "25 YEARS OLD" should then be followed down to the 900 SQFT row to obtain the size/age adjusted rent.

The rent charts also have various location adjustments, as well as adjustments for physical features such as the number of bathrooms, the type of garage facilities, the condition of the housing, etc. These should be subtracted from, or added to, the size/age adjusted rent, as specified, to determine the MBRR.

When computing the final biweekly rent (net rent) to be paid, the MBRR must be adjusted to include the value of Government-provided related facilities (utilities, appliances, furnishings and services); and the administrative adjustments prescribed in OMB Circular A-45. Use Form DI 1880, Rent Computation Schedule, or similar form as may be used by agencies other than DOI.

Where a dwelling is larger than the highest square footage in the chart pertinent to that unit, use the size/age rent and adjustments of the bottom (largest SQFT) row. This may eliminate the need for some administrative adjustments due to excess size of the housing. If a dwelling is smaller than the smallest square footage, use the lowest square footage listed on the chart.

The rent for a dwelling with more than 4 bedrooms (3 bedrooms for apartments and mobile homes) is calculated as if the unit had 4 bedrooms (3 bedrooms for apartments and mobile homes). In addition, the carport charge is the same regardless of the size of the carport; and the fireplace charge is the same for one or more fireplaces. For rental calculation purposes a "cap" of 3 bathrooms applies. Therefore, assume 3 bathrooms when applying the bathrooms charge in the rent charts shown in tables 3a-d, 4a-d and 5a-c.

To assist in the calculation of quarters MBRR's, examples are provided in the following pages. While the rates appearing in the following tables should allow you to establish MBRR's for essentially all of your properties, we recognize that we might not have anticipated all situations and conditions. Therefore, housing managers should use professional discretion to set rates for truly unusual situations. In cases where you must use some other method to establish rates, please notify the National Business Center, Products &

Services, Quarters Operations Office via telephone **303-969-7240** or fax 303-969-7173. You should explain the conditions, the rate used, and your reasoning so that we may anticipate such circumstances in the future. You should retain the documentation for such actions in your files.

B. SINGLE FAMILY HOUSING

For single-family detached houses, including plexed dwellings and townhouses, use the rental chart which appropriately describes the housing class and the number of bedrooms of the subject quarters. The charts for houses are in tables 3a through 3d.

Assume for example, a 3-bedroom, 1 1/2-bath house, that was built in 1972, and which has a 2-car garage, two fireplaces, a central refrigerated air conditioning system and 1,276 gross square feet of living space. The house, located near Broken Bow, NE, is fair in both exterior and interior condition.

First, the chart for 3-bedroom, good condition, 1 bathroom, houses (Table 3b) should be located and used. These charts are baseline charts, which assume that each house is in good condition inside and outside and has one full bathroom. Therefore, if the house is in good condition inside and outside and has one bathroom, no additional computations are needed. If there is a deviation from either good inside or outside condition or there are less or more bathrooms than one, then the computations must be changed as discussed below. In the first step, Table 3b is selected as the proper chart for 3-bedroom houses. Next, the size (gross finished floor space) should be rounded **down** to the nearest 100 square feet (from 1,276 to 1,200 sqft). Under the column headed "**SQFT**," the figure 1,200 should be located. Further adjustments will be taken from this row.

Finally, the appropriate age column should be selected. The house in this example is 2002 - 1972 = 30 years old. The age should be rounded **up** to the next highest age column, which, in this case, is the column headed "**35 YRS OLD**." Follow this column down to the 1,200 square feet row to obtain the size/age "Chart Rent" of $400.

The first adjustment is the extra bathroom charge. Follow the column headed "**PER EXTRA BATHROOM**" down to the 1,200 SQFT row to find a charge of $32 for a full extra bathroom. As the house in this example has only 1/2 of an extra bathroom, the adjustment is $32 x .5 (1/2 extra bathroom) = $16.00. Add $16 to the rent.

The second and third adjustments are made for a fair exterior and a fair interior condition. Follow the column headed "**FAIR EXTERIOR/INTERIOR***" down to the 1,200 SQFT row. The amount reflects a deduction of $14 for a house with a fair exterior **and** a deduction of $14 for a house with a fair interior. Since both the exterior and interior are in fair condition, the total adjustment is $-28.

The fourth adjustment is for the central refrigerated air conditioning system. Follow the column headed "A/C (REF)" down to the 1,200 SQFT row. The amount reflects an addition of $49 for central refrigerated air conditioning.

The fifth adjustment is for a two-car garage. Follow the column headed "**GARAGE (PER CAR)**" down to the 1,200 SQFT row. $26 should be charged for each car the garage is designed to accommodate. Since the house in this example has a 2-car garage, multiply the amount shown for one car ($26) times 2 to reflect the value of a 2-car garage (2 x $26 = $52). Add $52 to the rent.

The sixth adjustment is made for the fireplace. Follow the column headed "**FIREPLACES**" down to the 1,200 SQFT row. The amount reflects an addition of $23 for one or more fireplaces. Add $23 to the rent for the fireplace.

The final adjustment is the community adjustment. The house in this example is located near Broken Bow, NE. The notes beneath the table (see "**COMMUNITY ADJUSTMENTS**") reflect that Broken Bow, NE receives an adjustment of -$102. As instructed, subtract $102 from the rent. Community adjustments are given only to communities in which the market rents are **lower** than the regional average level of rents. Communities not listed in the tables have rents, which are equal to or higher than the regional average rent and do not receive community adjustments.

In summary, the adjustments that produce the Monthly Base Rental Rate for the house used in this example are shown below.

Chart Rent (1,200 SQFT/35 yrs. old)	$400.00
Extra Bath Adjustment (.5 X $32)	+ 16.00
Fair Exterior Condition Adjustment	- 14.00
Fair Interior Condition Adjustment	- 14.00
Central Refrigerated Air Conditioning Adjustment	+ 49.00
Garage Adjustment (Per Car X $26)	+ 52.00
Fireplace Adjustment	+ 23.00
Community Adjustment (Broken Bow, NE)	- 102.00
Monthly Base Rent	$410.00

TABLE 3a MONTHLY BASE RENT CHART - GOOD CONDITION, 4 BDR, 1 BATH, HOUSES
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SQFT	5 YRS OLD	15 YRS OLD	25 YRS OLD	35 YRS OLD	45 YRS OLD	55 YRS OLD	75+ YRS OLD	PER EXTRA BATH ROOM	EXCEL EXTER -IOR/ INTER -IOR*	FAIR EXTER -IOR/ INTER -IOR*	POOR EXTER -IOR/ INTER -IOR*	GAR-AGE PER (CAR)	FIRE-PLACES	PLEX	A/C (REF)
700	$516	$468	$443	$426	$413	$402	$386	$+19	$+20	$-14	$-19	$+26	$+23	$-20	$+49
800	$518	$470	$445	$428	$416	$405	$389	$+22	$+20	$-14	$-19	$+26	$+23	$-20	$+49
900	$521	$473	$448	$431	$418	$408	$392	$+24	$+20	$-14	$-19	$+26	$+23	$-20	$+49
1000	$524	$476	$451	$434	$421	$410	$394	$+27	$+20	$-14	$-19	$+26	$+23	$-20	$+49
1100	$526	$479	$454	$437	$424	$413	$397	$+30	$+20	$-14	$-19	$+26	$+23	$-20	$+49
1200	$529	$481	$456	$439	$426	$416	$400	$+32	$+20	$-14	$-19	$+26	$+23	$-20	$+49
1300	$532	$484	$459	$442	$429	$419	$402	$+35	$+20	$-14	$-19	$+26	$+23	$-20	$+49
1400	$535	$487	$462	$445	$432	$421	$405	$+38	$+20	$-14	$-19	$+26	$+23	$-20	$+49
1500	$537	$489	$464	$447	$434	$424	$408	$+41	$+20	$-14	$-19	$+26	$+23	$-20	$+49
1600	$540	$492	$467	$450	$437	$427	$410	$+43	$+20	$-14	$-19	$+26	$+23	$-20	$+49
1700	$543	$495	$470	$453	$440	$429	$413	$+46	$+20	$-14	$-19	$+26	$+23	$-20	$+49
1800	$545	$497	$472	$455	$443	$432	$416	$+49	$+20	$-14	$-19	$+26	$+23	$-20	$+49
1900	$548	$500	$475	$458	$445	$435	$419	$+51	$+20	$-14	$-19	$+26	$+23	$-20	$+49
2000	$551	$503	$478	$461	$448	$437	$421	$+54	$+20	$-14	$-19	$+26	$+23	$-20	$+49
2100	$553	$506	$481	$464	$451	$440	$424	$+57	$+20	$-14	$-19	$+26	$+23	$-20	$+49
2200	$556	$508	$483	$466	$453	$443	$427	$+59	$+20	$-14	$-19	$+26	$+23	$-20	$+49
2300	$559	$511	$486	$469	$456	$446	$429	$+62	$+20	$-14	$-19	$+26	$+23	$-20	$+49

ADDITIONAL ADJUSTMENTS:

STRUCTURAL ADJUSTMENTS:

CARPORT: ADD $16

CENTRAL EVAPORATIVE AIR CONDITIONING: ADD $25

COMMUNITY ADJUSTMENTS:

BELOIT, KS.	-$107;	LARNED,KS.	-$90;	NORTON, KS.	-$113;	PHILLIPSBURG, KS.	-$113;
STOCKTON, KS.	-$150;	WAKEENEY, KS.	-$144;	BROKEN BOW, NE.	-$102;	GORDON, NE.	-$90;
IMPERIAL, NE.	-$59;	MCCOOK, NE.	-$62;	SUPERIOR, NE.	-$150;	BOTTINEAU, ND.	-$78;
CARRINGTON, ND.	-$87;	HAZEN, ND.	-$89;	LANGDON, ND.	-$134;	OAKES, ND.	-$101;
VALLEY CITY, ND.	-$13;	WILLISTON, ND.	-$46;	FLANDREAU, SD.	-$87;	MOBRIDGE, SD.	-$58;
SISSETON, SD.	-$76;	WEBSTER, SD.	-$99;				

* - IF BOTH THE INTERIOR AND EXTERIOR ARE IN THIS CONDITION, APPLY THIS FACTOR TWICE.

REGARDLESS OF ADJUSTMENTS, THE MINIMUM BASE RENT IS $95 PER MONTH.

THE APPROPRIATE CPI FACTOR SHOULD BE APPLIED AFTER COMPLETING THE ABOVE ADJUSTMENTS.

TABLE 3b MONTHLY BASE RENT CHART - GOOD CONDITION, 3 BDR, 1 BATH, HOUSES
PLAINS SURVEY REGION

SQFT	5 YRS OLD	15 YRS OLD	25 YRS OLD	35 YRS OLD	45 YRS OLD	55 YRS OLD	75+ YRS OLD	PER EXTRA BATH ROOM	EXCEL EXTER -IOR/ INTER -IOR*	FAIR EXTER -IOR/ INTER -IOR*	POOR EXTER -IOR/ INTER -IOR*	GAR-AGE PER (CAR)	FIRE-PLACES	PLEX	A/C (REF)
500	$471	$423	$398	$381	$368	$357	$341	$+14	$+20	$-14	$-19	$+26	$+23	$-20	$+49
600	$473	$425	$400	$383	$371	$360	$344	$+16	$+20	$-14	$-19	$+26	$+23	$-20	$+49
700	$476	$428	$403	$386	$373	$363	$347	$+19	$+20	$-14	$-19	$+26	$+23	$-20	$+49
800	$479	$431	$406	$389	$376	$366	$349	$+22	$+20	$-14	$-19	$+26	$+23	$-20	$+49
900	$481	$434	$409	$392	$379	$368	$352	$+24	$+20	$-14	$-19	$+26	$+23	$-20	$+49
1000	$484	$436	$411	$394	$381	$371	$355	$+27	$+20	$-14	$-19	$+26	$+23	$-20	$+49
1100	$487	$439	$414	$397	$384	$374	$357	$+30	$+20	$-14	$-19	$+26	$+23	$-20	$+49
1200	$490	$442	$417	$400	$387	$376	$360	$+32	$+20	$-14	$-19	$+26	$+23	$-20	$+49
1300	$492	$444	$419	$402	$389	$379	$363	$+35	$+20	$-14	$-19	$+26	$+23	$-20	$+49
1400	$495	$447	$422	$405	$392	$382	$365	$+38	$+20	$-14	$-19	$+26	$+23	$-20	$+49
1500	$498	$450	$425	$408	$395	$384	$368	$+41	$+20	$-14	$-19	$+26	$+23	$-20	$+49
1600	$500	$452	$427	$410	$398	$387	$371	$+43	$+20	$-14	$-19	$+26	$+23	$-20	$+49
1700	$503	$455	$430	$413	$400	$390	$374	$+46	$+20	$-14	$-19	$+26	$+23	$-20	$+49
1800	$506	$458	$433	$416	$403	$393	$376	$+49	$+20	$-14	$-19	$+26	$+23	$-20	$+49
1900	$508	$461	$436	$419	$406	$395	$379	$+51	$+20	$-14	$-19	$+26	$+23	$-20	$+49
2000	$511	$463	$438	$421	$408	$398	$382	$+54	$+20	$-14	$-19	$+26	$+23	$-20	$+49
2100	$514	$466	$441	$424	$411	$401	$384	$+57	$+20	$-14	$-19	$+26	$+23	$-20	$+49

ADDITIONAL ADJUSTMENTS:

STRUCTURAL ADJUSTMENTS:

CARPORT: ADD $16

CENTRAL EVAPORATIVE AIR CONDITIONING: ADD $25

COMMUNITY ADJUSTMENTS:

BELOIT, KS.	-$107;	LARNED,KS.	-$90;	NORTON, KS.	-$113;	PHILLIPSBURG, KS.	-$113;
STOCKTON, KS.	-$150;	WAKEENEY, KS.	-$144;	BROKEN BOW, NE.	-$102;	GORDON, NE.	-$90;
IMPERIAL, NE.	-$59;	MCCOOK, NE.	-$62;	SUPERIOR, NE.	-$150;	BOTTINEAU, ND.	-$78;
CARRINGTON, ND.	-$87;	HAZEN, ND.	-$89;	LANGDON, ND.	-$134;	OAKES, ND.	-$101;
VALLEY CITY, ND.	-$13;	WILLISTON, ND.	-$46;	FLANDREAU, SD.	-$87;	MOBRIDGE, SD.	-$58;
SISSETON, SD.	-$76;	WEBSTER, SD.	-$99;				

* - IF BOTH THE INTERIOR AND EXTERIOR ARE IN THIS CONDITION, APPLY THIS FACTOR TWICE.

REGARDLESS OF ADJUSTMENTS, THE MINIMUM BASE RENT IS $95 PER MONTH.

THE APPROPRIATE CPI FACTOR SHOULD BE APPLIED AFTER COMPLETING THE ABOVE ADJUSTMENTS.

TABLE 3c MONTHLY BASE RENT CHART - GOOD CONDITION, 2 BDR, 1 BATH, HOUSES
PLAINS SURVEY REGION

SQFT	5 YRS OLD	15 YRS OLD	25 YRS OLD	35 YRS OLD	45 YRS OLD	55 YRS OLD	75+ YRS OLD	PER EXTRA BATH ROOM	EXCEL EXTER -IOR/ INTER -IOR*	FAIR EXTER -IOR/ INTER -IOR*	POOR EXTER -IOR/ INTER -IOR*	GAR-AGE PER (CAR)	FIRE-PLACES	PLEX	A/C (REF)
300	$417	$369	$344	$327	$314	$304	$287	$+10	$+20	$-14	$-19	$+26	$+23	$-20	$+49
400	$420	$372	$347	$330	$317	$306	$290	$+11	$+20	$-14	$-19	$+26	$+23	$-20	$+49
500	$422	$374	$349	$332	$319	$309	$293	$+14	$+20	$-14	$-19	$+26	$+23	$-20	$+49
600	$425	$377	$352	$335	$322	$312	$295	$+16	$+20	$-14	$-19	$+26	$+23	$-20	$+49
700	$428	$380	$355	$338	$325	$314	$298	$+19	$+20	$-14	$-19	$+26	$+23	$-20	$+49
800	$430	$382	$357	$340	$328	$317	$301	$+22	$+20	$-14	$-19	$+26	$+23	$-20	$+49
900	$433	$385	$360	$343	$330	$320	$304	$+24	$+20	$-14	$-19	$+26	$+23	$-20	$+49
1000	$436	$388	$363	$346	$333	$323	$306	$+27	$+20	$-14	$-19	$+26	$+23	$-20	$+49
1100	$438	$391	$366	$349	$336	$325	$309	$+30	$+20	$-14	$-19	$+26	$+23	$-20	$+49
1200	$441	$393	$368	$351	$338	$328	$312	$+32	$+20	$-14	$-19	$+26	$+23	$-20	$+49
1300	$444	$396	$371	$354	$341	$331	$314	$+35	$+20	$-14	$-19	$+26	$+23	$-20	$+49
1400	$447	$399	$374	$357	$344	$333	$317	$+38	$+20	$-14	$-19	$+26	$+23	$-20	$+49
1500	$449	$401	$376	$359	$346	$336	$320	$+41	$+20	$-14	$-19	$+26	$+23	$-20	$+49
1600	$452	$404	$379	$362	$349	$339	$322	$+43	$+20	$-14	$-19	$+26	$+23	$-20	$+49
1700	$455	$407	$382	$365	$352	$341	$325	$+46	$+20	$-14	$-19	$+26	$+23	$-20	$+49
1800	$457	$409	$384	$367	$355	$344	$328	$+49	$+20	$-14	$-19	$+26	$+23	$-20	$+49
1900	$460	$412	$387	$370	$357	$347	$331	$+51	$+20	$-14	$-19	$+26	$+23	$-20	$+49

ADDITIONAL ADJUSTMENTS:

STRUCTURAL ADJUSTMENTS:

CARPORT: ADD $16

CENTRAL EVAPORATIVE AIR CONDITIONING: ADD $25

COMMUNITY ADJUSTMENTS:

BELOIT, KS.	-$107;	LARNED,KS.	-$90;	NORTON, KS.	-$113;	PHILLIPSBURG, KS.	-$113;
STOCKTON, KS.	-$150;	WAKEENEY, KS.	-$144;	BROKEN BOW, NE.	-$102;	GORDON, NE.	-$90;
IMPERIAL, NE.	-$59;	MCCOOK, NE.	-$62;	SUPERIOR, NE.	-$150;	BOTTINEAU, ND.	-$78;
CARRINGTON, ND.	-$87;	HAZEN, ND.	-$89;	LANGDON, ND.	-$134;	OAKES, ND.	-$101;
VALLEY CITY, ND.	-$13;	WILLISTON, ND.	-$46;	FLANDREAU, SD.	-$87;	MOBRIDGE, SD.	-$58;
SISSETON, SD.	-$76;	WEBSTER, SD.	-$99;				

* - IF BOTH THE INTERIOR AND EXTERIOR ARE IN THIS CONDITION, APPLY THIS FACTOR TWICE.

REGARDLESS OF ADJUSTMENTS, THE MINIMUM BASE RENT IS $95 PER MONTH.

THE APPROPRIATE CPI FACTOR SHOULD BE APPLIED AFTER COMPLETING THE ABOVE ADJUSTMENTS.

TABLE 3d MONTHLY BASE RENT CHART - GOOD CONDITION, 1 BDR, 1 BATH, HOUSES
PLAINS SURVEY REGION

SQFT	5 YRS OLD	15 YRS OLD	25 YRS OLD	35 YRS OLD	45 YRS OLD	55 YRS OLD	75+ YRS OLD	PER EXTRA BATH ROOM	EXCEL EXTER -IOR/ INTER -IOR*	FAIR EXTER -IOR/ INTER -IOR*	POOR EXTER -IOR/ INTER -IOR*	GAR-AGE PER (CAR)	FIRE-PLACES	PLEX	A/C (REF)
100	$349	$301	$276	$259	$246	$236	$220	$+10	$+20	$-14	$-19	$+26	$+23	$-20	$+49
200	$352	$304	$279	$262	$249	$238	$222	$+10	$+20	$-14	$-19	$+26	$+23	$-20	$+49
300	$354	$307	$282	$265	$252	$241	$225	$+10	$+20	$-14	$-19	$+26	$+23	$-20	$+49
400	$357	$309	$284	$267	$254	$244	$228	$+11	$+20	$-14	$-19	$+26	$+23	$-20	$+49
500	$360	$312	$287	$270	$257	$247	$230	$+14	$+20	$-14	$-19	$+26	$+23	$-20	$+49
600	$363	$315	$290	$273	$260	$249	$233	$+16	$+20	$-14	$-19	$+26	$+23	$-20	$+49
700	$365	$317	$292	$275	$262	$252	$236	$+19	$+20	$-14	$-19	$+26	$+23	$-20	$+49
800	$368	$320	$295	$278	$265	$255	$238	$+22	$+20	$-14	$-19	$+26	$+23	$-20	$+49
900	$371	$323	$298	$281	$268	$257	$241	$+24	$+20	$-14	$-19	$+26	$+23	$-20	$+49
1000	$373	$325	$300	$283	$270	$260	$244	$+27	$+20	$-14	$-19	$+26	$+23	$-20	$+49
1100	$376	$328	$303	$286	$273	$263	$247	$+30	$+20	$-14	$-19	$+26	$+23	$-20	$+49
1200	$379	$331	$306	$289	$276	$265	$249	$+32	$+20	$-14	$-19	$+26	$+23	$-20	$+49
1300	$381	$334	$309	$292	$279	$268	$252	$+35	$+20	$-14	$-19	$+26	$+23	$-20	$+49
1400	$384	$336	$311	$294	$281	$271	$255	$+38	$+20	$-14	$-19	$+26	$+23	$-20	$+49
1500	$387	$339	$314	$297	$284	$274	$257	$+41	$+20	$-14	$-19	$+26	$+23	$-20	$+49

ADDITIONAL ADJUSTMENTS:

STRUCTURAL ADJUSTMENTS:

CARPORT: ADD $16

CENTRAL EVAPORATIVE AIR CONDITIONING: ADD $25

COMMUNITY ADJUSTMENTS:

BELOIT, KS.	-$107;	LARNED,KS.	-$90;	NORTON, KS.	-$113;
STOCKTON, KS.	-$150;	WAKEENEY, KS.	-$144;	BROKEN BOW, NE.	-$102;
IMPERIAL, NE.	-$59;	MCCOOK, NE.	-$62;	SUPERIOR, NE.	-$150;
CARRINGTON, ND.	-$87;	HAZEN, ND.	-$89;	LANGDON, ND.	-$134;
VALLEY CITY, ND.	-$13;	WILLISTON, ND.	-$46;	FLANDREAU, SD.	-$87;
SISSETON, SD.	-$76;	WEBSTER, SD.	-$99;		

PHILLIPSBURG, KS.	-$113;
GORDON, NE.	-$90;
BOTTINEAU, ND.	-$78;
OAKES, ND.	-$101;
MOBRIDGE, SD.	-$58;

* - IF BOTH THE INTERIOR AND EXTERIOR ARE IN THIS CONDITION, APPLY THIS FACTOR TWICE.

REGARDLESS OF ADJUSTMENTS, THE MINIMUM BASE RENT IS $95 PER MONTH.

THE APPROPRIATE CPI FACTOR SHOULD BE APPLIED AFTER COMPLETING THE ABOVE ADJUSTMENTS.

C. APARTMENTS

For all apartment units, use the rental chart, which appropriately describes the housing class and the number of bedrooms of the subject quarters. The charts for apartments are in Tables 4a through 4d.

Assume a 2-bedroom, 2-bathroom apartment, near Fargo, ND with 760 square feet. The exterior is in poor condition; the interior is in fair condition. The apartment, which was built in 1957, is 45 years old (2002 - 1957), has a carport, and central refrigerated air conditioning.

First, the two-bedroom chart for good condition apartments (Table 4b) should be located and used. These charts are baseline charts, which assume that each apartment is in good condition inside and outside and has one full bathroom. Therefore, if the apartment is in good condition inside and outside and has one bathroom, no additional computations are needed. If there is a deviation from either good inside or outside condition or there are less or more bathrooms than one, then the computations must be changed as discussed below. In the first step, Table 4b is selected as the proper chart for 2-bedroom apartments.

In the second step the size (gross living area) is rounded **down** from 760 to 700 square feet. Under the column headed **"SQFT"** the figure 700 should be located. All further adjustments will be taken from this row.

In the third step the appropriate age column is selected. A 45-year old apartment is between 35 and 45 years old; therefore, the **"45 YRS OLD"** column should be used. A two-bedroom apartment, in good condition with 700 square feet of living space (gross), and which is 45 years of age, has a "Chart Rent" of $323 per month.

The first adjustment is the extra bathroom adjustment charge. Following the 700 SQFT row along to the column headed **"PER EXTRA BATHROOM"** you will find a charge of $87. To compute the charge for the extra bathroom, multiply 1 (1 extra bath) times $87 (the extra bath charge). Add $87 to the rent.

The second and third adjustments are for a poor exterior and a fair interior condition. Follow the 700 SQFT row across the table to the column headed **"POOR EXTERIOR/INTERIOR*"** a deduction of $17 is shown; and in the next column titled **"FAIR EXTERIOR/INTERIOR*"**, a deduction of $12 is shown. Subtract from the rent $17 for poor exterior condition, and $12 for fair interior condition.

The fourth adjustment is for a carport. Beneath the table, under **"STRUCTURAL ADJUSTMENTS"**, there is an instruction to add $15 for a carport of any size. As instructed add $15 to the rent of this apartment.

The fifth adjustment is for the central refrigerated air conditioning system. Follow the column headed "A/C (REFRIG)" down to the 700 SQFT row. The amount reflects an addition of $49 for central refrigerated air conditioning.

The final adjustment is the community adjustment. The apartment in this example is located near Fargo, ND. The notes beneath the table (see "**COMMUNITY ADJUSTMENTS**") show no adjustment for Fargo, ND. Therefore, rental values in Fargo, ND for apartments are equal to or greater than the regional

average. Since positive community adjustments are not applied, no community adjustment is shown for Fargo, ND.

The last step is to round the resulting MBRR (Monthly Base Rental Rate) to the nearest whole dollar. Any amount resulting in an amount of $.50 or greater is rounded up; any amount resulting in an amount of $.49 or less is rounded down. The decision to round is discretionary.

In summary, the Monthly Base Rental Rate for the apartment in this example is determined as follows:

Chart Rent (700 SQFT/45 years old)	$323.00
Extra Bath Adjustment (1 X $87)	+87.00
Poor Exterior Adjustment	-17.00
Fair Interior Adjustment	-12.00
Carport Adjustment	+15.00
Central Refrigerated Air Conditioning Adjustment	+49.00
Location Adjustment (Fargo, ND)	- 00.00
Monthly Base Rental Rate	$445.00

TABLE 4a MONTHLY BASE RENT CHART - GOOD CONDITION, 3 BDR, 1 BATH, APARTMENTS
PLAINS SURVEY REGION

SQFT	5 YRS OLD	15 YRS OLD	25 YRS OLD	35 YRS OLD	45 YRS OLD	55 YRS OLD	75+ YRS OLD	PER EXTRA BATH ROOM	EXCEL EXTER IOR/ INTER IOR*	FAIR EXTER- IOR/ INTER- IOR*	POOR EXTER- IOR/ INTER- IOR*	GAR- AGE (ANY SIZE)	A/C (REFRIG)
600	$401	$375	$362	$353	$346	$340	$332	$+87	$+17	$-12	$-17	$+20	$+42
700	$411	$385	$372	$363	$356	$350	$341	$+87	$+17	$-12	$-17	$+20	$+49
800	$421	$395	$381	$372	$365	$360	$351	$+87	$+17	$-12	$-17	$+20	$+56
900	$430	$405	$391	$382	$375	$369	$361	$+87	$+17	$-12	$-17	$+20	$+63
1000	$440	$414	$401	$392	$385	$379	$370	$+87	$+17	$-12	$-17	$+20	$+70
1100	$450	$424	$410	$401	$394	$389	$380	$+87	$+17	$-12	$-17	$+20	$+77
1200	$459	$434	$420	$411	$404	$399	$390	$+87	$+17	$-12	$-17	$+20	$+84
1300	$469	$443	$430	$421	$414	$408	$399	$+87	$+17	$-12	$-17	$+20	$+84
1400	$479	$453	$440	$430	$424	$418	$409	$+87	$+17	$-12	$-17	$+20	$+84
1500	$488	$463	$449	$440	$433	$428	$419	$+87	$+17	$-12	$-17	$+20	$+84
1600	$498	$472	$459	$450	$443	$437	$429	$+87	$+17	$-12	$-17	$+20	$+84
1700	$508	$482	$469	$460	$453	$447	$438	$+87	$+17	$-12	$-17	$+20	$+84
1800	$518	$492	$478	$469	$462	$457	$448	$+87	$+17	$-12	$-17	$+20	$+84

ADDITIONAL ADJUSTMENTS:

STRUCTURAL ADJUSTMENTS:

CARPORT (ANY SIZE): ADD $15 CENTRAL EVAPORATIVE AIR CONDITIONING: ADD $20
FIREPLACE(S): ADD $30

COMMUNITY ADJUSTMENTS:

GORDON, NE. -$120; BOTTINEAU, ND. -$28; DICKINSON, ND. -$28; WAHPETON, ND. -$25;

*IF BOTH THE EXTERIOR AND INTERIOR ARE IN THIS CONDITION, APPLY THIS FACTOR TWICE.

REGARDLESS OF ADJUSTMENTS, THE MINIMUM BASE RENT IS $95 PER MONTH.

THE APPROPRIATE CPI FACTOR SHOULD BE APPLIED AFTER COMPLETING THE ABOVE ADJUSTMENTS.

TABLE 4b MONTHLY BASE RENT CHART - GOOD CONDITION, 2 BDR, 1 BATH, APARTMENTS
PLAINS SURVEY REGION

SQFT	5 YRS OLD	15 YRS OLD	25 YRS OLD	35 YRS OLD	45 YRS OLD	55 YRS OLD	75+ YRS OLD	PER EXTRA BATH ROOM	EXCEL EXTER IOR/ INTER IOR*	FAIR EXTER- IOR/ INTER- IOR*	POOR EXTER- IOR/ INTER- IOR*	GAR- AGE (ANY SIZE)	A/C (REFRIG)
400	$349	$324	$310	$301	$294	$289	$280	$+87	$+17	$-12	$-17	$+20	$+28
500	$359	$333	$320	$311	$304	$298	$290	$+87	$+17	$-12	$-17	$+20	$+35
600	$369	$343	$330	$320	$314	$308	$299	$+87	$+17	$-12	$-17	$+20	$+42
700	$378	$353	$339	$330	$323	$318	$309	$+87	$+17	$-12	$-17	$+20	$+49
800	$388	$362	$349	$340	$333	$327	$319	$+87	$+17	$-12	$-17	$+20	$+56
900	$398	$372	$359	$350	$343	$337	$328	$+87	$+17	$-12	$-17	$+20	$+63
1000	$408	$382	$368	$359	$352	$347	$338	$+87	$+17	$-12	$-17	$+20	$+70
1100	$417	$392	$378	$369	$362	$356	$348	$+87	$+17	$-12	$-17	$+20	$+77
1200	$427	$401	$388	$379	$372	$366	$357	$+87	$+17	$-12	$-17	$+20	$+84
1300	$437	$411	$398	$388	$381	$376	$367	$+87	$+17	$-12	$-17	$+20	$+84
1400	$446	$421	$407	$398	$391	$386	$377	$+87	$+17	$-12	$-17	$+20	$+84
1500	$456	$430	$417	$408	$401	$395	$387	$+87	$+17	$-12	$-17	$+20	$+84
1600	$466	$440	$427	$417	$411	$405	$396	$+87	$+17	$-12	$-17	$+20	$+84

ADDITIONAL ADJUSTMENTS:

STRUCTURAL ADJUSTMENTS:

CARPORT (ANY SIZE): ADD $15 CENTRAL EVAPORATIVE AIR CONDITIONING: ADD $20
FIREPLACE(S): ADD $30

COMMUNITY ADJUSTMENTS:

GORDON, NE. -$120; BOTTINEAU, ND. -$28; DICKINSON, ND. -$28; WAHPETON, ND. -$25;

*IF BOTH THE EXTERIOR AND INTERIOR ARE IN THIS CONDITION, APPLY THIS FACTOR TWICE.

REGARDLESS OF ADJUSTMENTS, THE MINIMUM BASE RENT IS $95 PER MONTH.

THE APPROPRIATE CPI FACTOR SHOULD BE APPLIED AFTER COMPLETING THE ABOVE ADJUSTMENTS.

TABLE 4c MONTHLY BASE RENT CHART - GOOD CONDITION, 1 BDR, 1 BATH, APARTMENTS
PLAINS SURVEY REGION

SQFT	5 YRS OLD	15 YRS OLD	25 YRS OLD	35 YRS OLD	45 YRS OLD	55 YRS OLD	75+ YRS OLD	PER EXTRA BATH ROOM	EXCEL EXTER IOR/ INTER IOR*	FAIR EXTER- IOR/ INTER- IOR*	POOR EXTER- IOR/ INTER- IOR*	GAR- AGE (ANY SIZE)	A/C (REFRIG)
300	$298	$272	$259	$250	$243	$237	$228	$+87	$+17	$-12	$-17	$+20	$+21
400	$308	$282	$269	$259	$252	$247	$238	$+87	$+17	$-12	$-17	$+20	$+28
500	$317	$292	$278	$269	$262	$257	$248	$+87	$+17	$-12	$-17	$+20	$+35
600	$327	$301	$288	$279	$272	$266	$258	$+87	$+17	$-12	$-17	$+20	$+42
700	$337	$311	$298	$288	$282	$276	$267	$+87	$+17	$-12	$-17	$+20	$+49
800	$346	$321	$307	$298	$291	$286	$277	$+87	$+17	$-12	$-17	$+20	$+56
900	$356	$330	$317	$308	$301	$295	$287	$+87	$+17	$-12	$-17	$+20	$+63
1000	$366	$340	$327	$318	$311	$305	$296	$+87	$+17	$-12	$-17	$+20	$+70
1100	$376	$350	$336	$327	$320	$315	$306	$+87	$+17	$-12	$-17	$+20	$+77
1200	$385	$360	$346	$337	$330	$324	$316	$+87	$+17	$-12	$-17	$+20	$+84
1300	$395	$369	$356	$347	$340	$334	$325	$+87	$+17	$-12	$-17	$+20	$+84
1400	$405	$379	$366	$356	$349	$344	$335	$+87	$+17	$-12	$-17	$+20	$+84
1500	$414	$389	$375	$366	$359	$354	$345	$+87	$+17	$-12	$-17	$+20	$+84

ADDITIONAL ADJUSTMENTS:

STRUCTURAL ADJUSTMENTS:

CARPORT (ANY SIZE): ADD $15 CENTRAL EVAPORATIVE AIR CONDITIONING: ADD $20
FIREPLACE(S): ADD $30

COMMUNITY ADJUSTMENTS:

GORDON, NE. -$120; BOTTINEAU, ND. -$28; DICKINSON, ND. -$28; WAHPETON, ND. -$25;

*IF BOTH THE EXTERIOR AND INTERIOR ARE IN THIS CONDITION, APPLY THIS FACTOR TWICE.

REGARDLESS OF ADJUSTMENTS, THE MINIMUM BASE RENT IS $95 PER MONTH.

THE APPROPRIATE CPI FACTOR SHOULD BE APPLIED AFTER COMPLETING THE ABOVE ADJUSTMENTS.

TABLE 4d MONTHLY BASE RENT CHART - GOOD CONDITION, 0 BDR, 1 BATH, APARTMENTS
PLAINS SURVEY REGION

SQFT	5 YRS OLD	15 YRS OLD	25 YRS OLD	35 YRS OLD	45 YRS OLD	55 YRS OLD	75+ YRS OLD	PER EXTRA BATH ROOM	EXCEL EXTER IOR/ INTER IOR*	FAIR EXTER- IOR/ INTER- IOR*	POOR EXTER- IOR/ INTER- IOR*	GAR- AGE (ANY SIZE)	A/C (REFRIG)
100	$220	$194	$181	$171	$165	$159	$150	$+87	$+17	$-12	$-17	$+20	$+20
200	$229	$204	$190	$181	$174	$169	$160	$+87	$+17	$-12	$-17	$+20	$+20
300	$239	$213	$200	$191	$184	$178	$170	$+87	$+17	$-12	$-17	$+20	$+21
400	$249	$223	$210	$201	$194	$188	$179	$+87	$+17	$-12	$-17	$+20	$+28
500	$259	$233	$219	$210	$203	$198	$189	$+87	$+17	$-12	$-17	$+20	$+35
600	$268	$243	$229	$220	$213	$207	$199	$+87	$+17	$-12	$-17	$+20	$+42
700	$278	$252	$239	$230	$223	$217	$208	$+87	$+17	$-12	$-17	$+20	$+49
800	$288	$262	$249	$239	$232	$227	$218	$+87	$+17	$-12	$-17	$+20	$+56
900	$297	$272	$258	$249	$242	$237	$228	$+87	$+17	$-12	$-17	$+20	$+63
1000	$307	$281	$268	$259	$252	$246	$238	$+87	$+17	$-12	$-17	$+20	$+70
1100	$317	$291	$278	$268	$262	$256	$247	$+87	$+17	$-12	$-17	$+20	$+77

ADDITIONAL ADJUSTMENTS:

STRUCTURAL ADJUSTMENTS:

CARPORT (ANY SIZE): ADD $15 CENTRAL EVAPORATIVE AIR CONDITIONING: ADD $20
FIREPLACE(S): ADD $30

COMMUNITY ADJUSTMENTS:

GORDON, NE. -$120; BOTTINEAU, ND. -$28; DICKINSON, ND. -$28; WAHPETON, ND. -$25;

*IF BOTH THE EXTERIOR AND INTERIOR ARE IN THIS CONDITION, APPLY THIS FACTOR TWICE.

REGARDLESS OF ADJUSTMENTS, THE MINIMUM BASE RENT IS $95 PER MONTH.

THE APPROPRIATE CPI FACTOR SHOULD BE APPLIED AFTER COMPLETING THE ABOVE ADJUSTMENTS.

D. MOBILE HOMES, TRAVEL TRAILERS, AND HOUSEBOATS

For these housing classes, use the mobile home base rental charts (Tables 5a-c). To familiarize the reader with these charts, assume a 490 square foot, 1-bedroom mobile home built in 1967 with a 3/4 bathroom. This mobile home is in poor interior and poor exterior condition and is located near Great Bend, KS. The Monthly Base Rental Rate for the mobile home in this example is calculated from Table 5c as follows.

The 1-bedroom chart for good condition mobile homes (Table 5c) should be located and used. This chart is a baseline chart, which assumes that each mobile home is in good condition inside and outside and has one full bathroom. Therefore, if the mobile home is in good condition inside and outside and has one full bathroom, no additional computations are needed. If there is a deviation from either good inside or outside condition or there are less or more bathrooms than one, then the computations must be changed accordingly.

First, locate the table for mobile homes in good condition with *one full bathroom* (Table 5c). Next, the gross square feet of living area should be rounded down to 400 square feet, and the **age** (2002 - 1967 = 35 years) is rounded **up** to 35+ years. The column headed **"SQFT"** is followed **down** to 400. All other adjustments are taken from this row. On this row, under the column headed **"35+ YRS OLD,"** the "Chart Rent" is $204.

The base rental value of $204 (computed above) includes the value of one full bathroom. Since the unit in this example has only a 3/4 bathroom, an adjustment must be made for the missing 1/4 bathroom. At the top of the table is a column titled **"PER EXTRA BATHROOM."** Follow this column down to the 400 SQFT row. A value of $20 is shown. Multiply this value times .25 (1/4 bathroom) to calculate the value of the missing 1/4 bathroom ($20 X .25 = $5.00). Subtract $5 from the rent.

The second and third adjustments are for the condition of the unit. Follow the 400 SQFT row to the column headed **"POOR EXTERIOR/INTERIOR*"**; subtract $15 for the poor exterior condition and another $15 for the poor interior condition.

The final adjustment is the community adjustment. The mobile home in this example is located near Great Bend, KS. The notes beneath the table (see "**COMMUNITY ADJUSTMENTS**") show an adjustment of -$126 for Great Bend, KS. The rental values for mobile homes in Great Bend, KS are much lower than the survey area average. The rent for mobile homes which use Great Bend, KS as the nearest established community should be reduced by $126.

The Monthly Base Rental Rate for this mobile home is shown below.

Chart Rent (400 SQFT/35+ years old)	$204.00
Bathroom Adjustment (.25 X $20)	- 5.00
Poor Exterior	- 15.00
Poor Interior	- 15.00
Location Adjustment (Great Bend, KS)	- 126.00
Computed Monthly Base Rental Rate	$43.00
Computed Monthly Base Rental Rate (Rounded)	$43.00
Actual Monthly Base Rental Rate (Minimum Base)	$95.00

Note: In this example, the Monthly Base Rental Rate computes to $43.00, which is less than the $95.00 minimum Monthly Base Rental Rate for the Plains Survey Region (refer to the footnotes on each rent table for the minimum base rent). Therefore, the Monthly Base Rental Rate for the mobile home in this example will be set at $95.00. Keep in mind that the *Monthly Base Rental Rate* is different from the minimum monthly *final rent*. Thus, $95.00 is not the minimum final rent possible.

TABLE 5a MONTHLY BASE RENT CHART - GOOD CONDITION, 3 BDR, 1 BATH, MOBILE HOMES
PLAINS SURVEY REGION

SQFT	5 YRS OLD	10 YRS OLD	15 YRS OLD	20 YRS OLD	25 YRS OLD	30 YRS OLD	35+ YRS OLD	PER EXTRA BATH ROOM	EXCEL EXTER-IOR/ INTER-IOR*	FAIR EXTER-IOR/ INTER-IOR*	POOR EXTER-IOR/ INTER-IOR*
400	$332	$329	$325	$321	$317	$314	$310	$+20	$+10	$-10	$-15
500	$337	$334	$330	$326	$322	$319	$315	$+20	$+10	$-10	$-15
600	$342	$339	$335	$331	$327	$324	$320	$+20	$+10	$-10	$-15
700	$347	$344	$340	$336	$332	$329	$325	$+20	$+10	$-10	$-15
800	$352	$349	$345	$341	$337	$334	$330	$+20	$+10	$-10	$-15
900	$357	$354	$350	$346	$342	$339	$335	$+20	$+10	$-10	$-15
1000	$362	$359	$355	$351	$347	$344	$340	$+20	$+10	$-10	$-15
1100	$367	$364	$360	$356	$352	$349	$345	$+20	$+10	$-10	$-15
1200	$372	$369	$365	$361	$357	$354	$350	$+20	$+10	$-10	$-15
1300	$377	$374	$370	$366	$362	$359	$355	$+20	$+10	$-10	$-15
1400	$382	$379	$375	$371	$367	$364	$360	$+20	$+10	$-10	$-15
1500	$387	$384	$380	$376	$372	$369	$365	$+20	$+10	$-10	$-15
1600	$392	$389	$385	$381	$377	$374	$370	$+20	$+10	$-10	$-15

ADDITIONAL ADJUSTMENTS:

STRUCTURAL ADJUSTMENTS:

GARAGE (ANY SIZE): ADD $17
CARPORT (ANY SIZE): ADD $12
FIREPLACE: ADD $20
CENTRAL REFRIGERATED AIR CONDITIONING: ADD $20
CENTRAL EVAPORATIVE AIR CONDITIONING: ADD $15

COMMUNITY ADJUSTMENTS:

GREAT BEND, KS. -$126; BROKEN BOW, NE. -$111; GORDON, NE. -$234; MITCHELL, NE. -$26;
BOTTINEAU, ND. -$165; CARRINGTON, ND. -$36; OAKES, ND. -$47; WILLISTON, ND. -$49;
CUSTER, SD. -$34; HOT SPRINGS, SD. -$14; MITCHELL, SD. -$30; MOBRIDGE, SD. -$31;
WEBSTER, SD. -$101;

* - IF BOTH THE EXTERIOR AND INTERIOR ARE IN THIS CONDITION, APPLY THIS FACTOR TWICE.

REGARDLESS OF ADJUSTMENTS, THE MINIMUM BASE RENT IS $95 PER MONTH.

THE APPROPRIATE CPI FACTOR SHOULD BE APPLIED AFTER COMPLETING THE ABOVE ADJUSTMENTS.

TABLE 5b MONTHLY BASE RENT CHART - GOOD CONDITION, 2 BDR, 1 BATH, MOBILE HOMES
PLAINS SURVEY REGION

SQFT	5 YRS OLD	10 YRS OLD	15 YRS OLD	20 YRS OLD	25 YRS OLD	30 YRS OLD	35+ YRS OLD	PER EXTRA BATH ROOM	EXCEL EXTER-IOR/ INTER-IOR*	FAIR EXTER-IOR/ INTER-IOR*	POOR EXTER-IOR/ INTER-IOR*
400	$279	$276	$272	$268	$264	$261	$257	$+20	$+10	$-10	$-15
500	$284	$281	$277	$273	$269	$266	$262	$+20	$+10	$-10	$-15
600	$289	$286	$282	$278	$274	$271	$267	$+20	$+10	$-10	$-15
700	$294	$291	$287	$283	$279	$276	$272	$+20	$+10	$-10	$-15
800	$299	$296	$292	$288	$284	$281	$277	$+20	$+10	$-10	$-15
900	$304	$301	$297	$293	$289	$286	$282	$+20	$+10	$-10	$-15
1000	$309	$306	$302	$298	$294	$291	$287	$+20	$+10	$-10	$-15
1100	$314	$311	$307	$303	$299	$296	$292	$+20	$+10	$-10	$-15
1200	$319	$316	$312	$308	$304	$301	$297	$+20	$+10	$-10	$-15
1300	$324	$321	$317	$313	$309	$306	$302	$+20	$+10	$-10	$-15
1400	$329	$326	$322	$318	$314	$311	$307	$+20	$+10	$-10	$-15
1500	$334	$331	$327	$323	$319	$316	$312	$+20	$+10	$-10	$-15

ADDITIONAL ADJUSTMENTS:

STRUCTURAL ADJUSTMENTS:

GARAGE (ANY SIZE): ADD $17
CARPORT (ANY SIZE): ADD $12
FIREPLACE: ADD $20
CENTRAL REFRIGERATED AIR CONDITIONING: ADD $20
CENTRAL EVAPORATIVE AIR CONDITIONING: ADD $15

COMMUNITY ADJUSTMENTS:

GREAT BEND, KS. -$126; BROKEN BOW, NE. -$111; GORDON, NE. -$234; MITCHELL, NE. -$26;
BOTTINEAU, ND. -$165; CARRINGTON, ND. -$36; OAKES, ND. -$47; WILLISTON, ND. -$49;
CUSTER, SD. -$34; HOT SPRINGS, SD. -$14; MITCHELL, SD. -$30; MOBRIDGE, SD. -$31;
WEBSTER, SD. -$101;

* - IF BOTH THE EXTERIOR AND INTERIOR ARE IN THIS CONDITION, APPLY THIS FACTOR TWICE.

REGARDLESS OF ADJUSTMENTS, THE MINIMUM BASE RENT IS $95 PER MONTH.

THE APPROPRIATE CPI FACTOR SHOULD BE APPLIED AFTER COMPLETING THE ABOVE ADJUSTMENTS.

TABLE 5c MONTHLY BASE RENT CHART - GOOD CONDITION, 1 BDR, 1 BATH, MOBILE HOMES
PLAINS SURVEY REGION

SQFT	5 YRS OLD	10 YRS OLD	15 YRS OLD	20 YRS OLD	25 YRS OLD	30 YRS OLD	35+ YRS OLD	PER EXTRA BATH ROOM	EXCEL EXTER-IOR/ INTER-IOR*	FAIR EXTER-IOR/ INTER-IOR*	POOR EXTER-IOR/ INTER-IOR*
100	$211	$208	$204	$200	$196	$193	$189	$+20	$+10	$-10	$-15
200	$216	$213	$209	$205	$201	$198	$194	$+20	$+10	$-10	$-15
300	$221	$218	$214	$210	$206	$203	$199	$+20	$+10	$-10	$-15
400	$226	$223	$219	$215	$211	$208	$204	$+20	$+10	$-10	$-15
500	$231	$228	$224	$220	$216	$213	$209	$+20	$+10	$-10	$-15
600	$236	$233	$229	$225	$221	$218	$214	$+20	$+10	$-10	$-15
700	$241	$238	$234	$230	$226	$223	$219	$+20	$+10	$-10	$-15
800	$246	$243	$239	$235	$231	$228	$224	$+20	$+10	$-10	$-15
900	$251	$248	$244	$240	$236	$233	$229	$+20	$+10	$-10	$-15
1000	$256	$253	$249	$245	$241	$238	$234	$+20	$+10	$-10	$-15
1100	$261	$258	$254	$250	$246	$243	$239	$+20	$+10	$-10	$-15
1200	$266	$263	$259	$255	$251	$248	$244	$+20	$+10	$-10	$-15

ADDITIONAL ADJUSTMENTS:

STRUCTURAL ADJUSTMENTS:

GARAGE (ANY SIZE): ADD $17
CARPORT (ANY SIZE): ADD $12
FIREPLACE: ADD $20
CENTRAL REFRIGERATED AIR CONDITIONING: ADD $20
CENTRAL EVAPORATIVE AIR CONDITIONING: ADD $15

COMMUNITY ADJUSTMENTS:

GREAT BEND, KS. -$126; BROKEN BOW, NE. -$111; GORDON, NE. -$234; MITCHELL, NE. -$26;
BOTTINEAU, ND. -$165; CARRINGTON, ND. -$36; OAKES, ND. -$47; WILLISTON, ND. -$49;
CUSTER, SD. -$34; HOT SPRINGS, SD. -$14; MITCHELL, SD. -$30; MOBRIDGE, SD. -$31;
WEBSTER, SD. -$101;

* - IF BOTH THE EXTERIOR AND INTERIOR ARE IN THIS CONDITION, APPLY THIS FACTOR TWICE.

REGARDLESS OF ADJUSTMENTS, THE MINIMUM BASE RENT IS $95 PER MONTH.

THE APPROPRIATE CPI FACTOR SHOULD BE APPLIED AFTER COMPLETING THE ABOVE ADJUSTMENTS.

E. CABINS OR LOOKOUTS

For purposes of rental rate establishment, the rental housing class most comparable to cabins or lookouts would be 1-bedroom, single-family houses, regardless of the number of bedrooms in the cabin. One-bedroom, single-family rental houses generally consist of smaller and older housing units. Where the cabins or lookouts are outfitted for housekeeping, and contain an independent primary heating system, the rental rates (including all applicable adjustments) are determined by using the 1-bedroom house chart (i.e. Table 3d).

Where a cabin or lookout lacks full housekeeping facilities (including running water, an inside heated bathroom, or a central heating system), additional adjustments (shown below) must be made to the Monthly Base Rental Rate. A free standing stove without a fan, or a fireplace does not qualify as a central primary heating system. These adjustments are designed to take into consideration the inconvenience resulting from the lack of full housekeeping facilities. However, the adjusted monthly base rental rate may not be set below the minimum monthly base rent of $95.

. No Electricity =	- 20%
. No Inside Bathroom =	- 20%
. No Running Water =	- 20%
. No Central Heating System =	- 15% (*)
. Less Than Two Rooms (One-Room Cabin or Lookout) =	- 10%

(*) Applied only if used during the heating season.

F. BUNKHOUSE AND DORMITORIES

Bunkhouses and dormitories should only include housing units that have been specifically constructed or modified for use as bunkhouses or dormitories. Single-family houses, apartments or mobile homes that are **used** as dormitories or bunkhouses, must be valued as what they are (houses, apartments or mobile homes), with the rent divided by the number of **planned** occupants (normally 2 per bedroom).

Dormitory or bunkhouse units typically lack either a living room or kitchen, or have common baths and kitchens serving many people. Many also have multiple bunk beds in large ward-like rooms. Such housing units pose a valuation problem, as they are normally found only in association with institutions such as the military or colleges, of which its occupants are members. Since these institutions do not typically rent to the public at large, one cannot obtain an arms-length market rent.

Under circumstances where there is a lack of comparable rental data, OMB Circular A-45 provides that rental rates may be established using an extension of the Principle of Comparability. Under this procedure, rental rates are established using the most comparable rental housing available, and the rate is essentially 50 percent of the average house rent.

During the February, 1994 National Quarters Conference, the National Quarters Council decided that one aggregate monthly rate should be established for **all** dormitories in a survey region. This aggregate dormitory rate, which includes the value of Government-provided utilities, furnishings and services, was determined as follows. An analysis of the comparables used in this survey found that the average single-family house had 1,165 square feet of finished floor space, 2.6 bedrooms and an average monthly-adjusted contract rent of $421. By applying an extension of the Principle of Comparability, the Base Shelter Rental Rate (BSRR) for bunkhouses and dormitories is calculated as shown below.

During the 2002 National Quarters Conference, the National Quarters Council reviewed different dormitory costing methods for the newer types of dormitories being built by some agencies. In researching new and existing dormitory models it was found the majority of the dormitories plan to house two occupants per room, which the current costing methodology is based upon. In addition, most occupants in dormitories share both a kitchen and bathroom. Based on these factors the Council decided to continue using the current costing methodology.

Average adjusted contract rent x .5 = $421 x .5 = $211.00 (Rounded)

$211.00 / (average # of bedrooms x 2 occupants per bedroom)
$211.00 / (2.6 bedrooms x 2 occupants) = $211.00 / 5.2 = $40.58 per month/per occupant.

Charges were then added to this rate for utilities, services and furnishings that are provided by the Government. The aggregate value of these items was based on a study of the rates prevailing in the regional survey area. These charges were prorated based upon a 1,165 square foot, 2.6 bedrooms, single-family house occupied by 2 people per bedroom. The aggregate charge for these related facilities is $43.10.

Monthly, weekly, and daily bunkhouse and dormitory rates are computed as follows.

TABLE 6 BUNKHOUSE/DORMITORY RENTS

PLAINS

Monthly Charge

Dormitory Rate $40.58
Related Facilities Charges $43.10

MBRR .....$83.70 (Rounded)

Bi-Weekly Charge

To convert to bi-weekly rate
multiply MBRR by .4615 and
round to nearest five cents $38.65

Weekly Charge

To convert to weekly rate
multiply MBRR by .2308 and
round to nearest five cents $19.30

Daily Charge

To convert to daily rate
multiply MBRR by .0333 and
round to nearest five cents $2.80

Note: An administrative adjustment of -10% is permitted if 3 or more people must share a bedroom or sleeping area. Also, an administrative adjustment of –10% is permitted for dormitories that lack kitchen or cooking facilities.

G. TRANSIENT QUARTERS

Transient quarters are those that are occupied on a transient basis, normally for a period of 90 days or less. Government provided transient quarters offer a range of accommodations. At some locations kitchen facilities, private telephones and private bathrooms may be available; at others, they are not provided. At some locations, maid service is provided (with varying degrees of frequency); at other locations, employees are "issued" bedding and other domestic items, and must take care of their own house keeping arrangements.

Given the diversity of facilities and services associated with Government-provided transient quarters, the QMIS National Quarters Council determined that private housing, comparable to Government transient quarters, generally does not exist. Accordingly, the rental charges for transient quarters have been established by extending the principle of comparability, as provided in OMB Circular A-45.

Essentially, the rental charge for transient quarters is the sum of the monthly dormitory rate (see Table 6); a monthly charge for maid service (Table 18); and a 20 percent administrative/service charge required by OMB Circular A-45 paragraph 7.c (4)(a). Monthly, weekly and daily charges for transient quarters are shown, below, in Table 7.

TABLE 7 TRANSIENT QUARTERS RENTS

Dormitory BSRR	$40.58
Related Facilities Charges (Table 6)	43.10
Maid Service (Table 18)	67.75
Subtotal	$151.43
Administrative Charge (OMB Cir. A-45)	x 1.20
Total (Rounded)	$181.72
Monthly Charge (Rounded)	$181.70
Bi-Weekly Charge ($181.70 x .4615 Rounded)	$83.85
Weekly Charge ($181.70 x .2308 Rounded)	$41.95
Daily Charge ($181.70 x .0333 Rounded)	$6.05

H. TRAILER SPACES

During the course of the survey, trailer pads were surveyed in a wide variety of mobile home parks and varied widely in physical characteristics, utilities, rents, and geographical location.

A simplified analysis of this data was done. The value of related facilities in the contract rent was subtracted to arrive at an adjusted rent. After excluding extreme outliers, the average adjusted rent was determined for the remaining samples.

The average adjusted rent was then divided into the actual rent of each remaining sample. Those communities where the adjusted contract rents were significantly lower than the average rent for the region were given their typical adjusted rents. The rental rates of trailer pads in all other communities were established at the survey average rental level for the region.

During the February, 1993 National Quarters Conference, the National Quarters Officers of the agencies that participate in the Quarters Management Program agreed to assess the same monthly base rental rate (the rate for a single-wide space) for **all** GFQ trailer spaces. This is because most employees do not own/occupy doublewide mobile homes, and because the market differences are negligible.

To determine the trailer pad Monthly Base Rental Rate, use the applicable rate contained in Table 8. Do not use the rates in Table 8 if the trailer pad is occupied by a Government-owned or leased mobile home, as the land rent is already included in the base rent for all improved quarters.

If, as an example, the trailer pad were occupied by a tenant-owned mobile home located near Carrington, ND, the base rent for this pad would be $58 per month. If, for another example, the trailer space were located near Leavenworth, KS, the base rental rate for this pad would be $88 (the "All Other Locations" charge). No other adjustments are made for physical characteristics such as the date the trailer pad was installed, the front or square footage, or the total number of sites at that location.

However, all appropriate administrative adjustments (such as amenity and isolation adjustments), as well as all charges for Government provided related facilities (such as utilities and furnishings) should be applied to the Monthly Base Rental Rates in Table 8 to determine the monthly net rental charge.

TABLE 8 TRAILER SPACES - MONTHLY BASE RENTAL RATES

COMMUNITIES	MONTHLY BASE RENTAL RATES
KANSAS	
Great Bend, KS	$54
NEBRASKA	
Broken Bow, NE	$36
Gordon, NE	$38
Valentine, NE	$42
NORTH DAKOTA	
Bottineau, ND	$48
Carrington, ND	$58
Oakes, ND	$58
SOUTH DAKOTA	
Mobridge, SD	$52
Webster, SD	$48
ALL OTHER LOCATIONS	$88

I. OBSOLETE QUARTERS

OMB Circular A-45 revised October 20, 1993 excludes from the term rental quarters ". . . housing which due to extreme deterioration is unsuitable for occupancy except in exigent circumstances. . .." The net effect of this change means there will be no base rental rate for obsolete quarters. However, assessments will be made for utilities, furnishings, appliances and any other services that are provided by the Government.

The Department of the Interior Quarters Handbook (DQH), and the regulations of other QMIS program participants, provide that housing used as employee quarters must be safe, sanitary, and energy efficient. Where housing is in obsolete condition, it is by definition unfit for use as employee housing, and should be renovated, replaced, destroyed or used for non-residential purposes. Section 7.3A of the DQH also provides that the appropriate Program Assistant Secretary, or his/her designee (Bureau Head), may authorize temporary occupancy (for a period not to exceed one year), pending rehabilitation or replacement action where sufficient written justification is provided.

VI. CHARGES FOR UTILITIES, APPLIANCES AND RELATED SERVICES

A. BACKGROUND

OMB Circular A-45 requires that, whenever possible, utilities should be provided by a private company and billed directly to quarters occupants. Where Government-furnished utilities are provided, they should be metered or measured. When Government-furnished utilities are not metered or measured, consumption will be determined from an analysis of the average amounts of utilities used in comparable private housing in the nearest established community or survey area. **Where the Government furnishes utilities, and where the quarters rental rates are established by the regional survey method, the utility rates shall be the regional average utility rates prescribed in this report - <u>not</u> the rates prevailing in the nearest established community.**

The regional average utility rates contained in this report include all applicable delivery charges, adjustments, taxes and surcharges. Charges for Government-provided appliances, services and furnishings will be based upon nationwide average costs.

The following sections of this report detail the consumption and cost data to be used in the circumstances described above. The cost data in this report will be updated by the QMIS Program Office each year and distributed with the Consumer Price Index (CPI) adjustment that takes effect each year.

B. ENERGY CONSUMPTION STUDY

1. **General**. Energy consumption estimates are required where the Government furnishes the space heating or cooling fuel and the electricity, and where consumption is neither metered nor measured. In such instances, average energy consumption must be estimated and the Government must assess a charge based on private sector energy costs in the survey area. No methodology for estimating energy consumption can exactly predict the amounts of energy needed to heat or cool specific dwellings. Precise consumption measurements are possible only when metering is used. However, the methodology used in this report will yield **reasonable** estimates of the heating and cooling energy consumption requirements of unmetered dwellings. The methodology employed in this section was contractor-developed. For this report, however, the contractor-provided tables and conversion charts have been reformatted, and the methodology has been restated to simplify the process of estimating energy consumption requirements. The unit costs for various fuel types and for electricity (e.g., the cost per gallon for fuel oil and propane; the cost per MCF (1,000 cubic feet) for natural gas; and the cost per KwH for electricity) are regional averages of the unit fuel/electricity prices gathered by the contractor in each community surveyed.

2. **Housing Prototypes**. For the Plains energy study, estimates of the heating and cooling energy requirements were prepared for each of the following six prototypical housing units.

   Type I - Single family, one story, no basement

   Type II - Single family, one story, full basement

   Type III - Single family, two story, no basement

   Type IV - Single family, two story, full basement

   Type V - Apartment unit

   Type VI - Mobile Home

3. **Assumptions**. For each of the housing prototypes, the following assumptions were made:

   a. Location. - The housing is located in Rapid City, SD.

   b. R values. - Each housing type has the R values of insulation in floors, walls, and ceilings recommended in the HUD Minimum Property Standards (HUD-MPS) for the Rapid City, SD area.

   c. Occupants. - The housing contains an average compliment of occupants who are energy conscious (one person per 500 feet of floor space was assumed).

   d. All measurements are of finished living space only and are based upon exterior dimensions.

   e. Condition. - The housing is in good condition.

f. Building shape. - A rectangular shape with a ratio of 2:1 was established. This provides more building skin than a square configuration therefore, the rectangular shape yields a conservative estimate of skin loads.

g. Window area. - A window area of 10 percent of wall area was used to match UBC (Uniform Building Code) minimum window area standards.

h. Roof type. - A flat or pitched roof with ceiling insulation was assumed in all cases.

i. Air changes. - 1.5 air changes per hour was established as representing a conservative estimate of air changes in residential applications.

j. Perimeter loss. - Approximately 10 percent of overall building load is attributed to the slab on grade floors with rigid insulation to a value of R-6.

4. Using the above assumptions, infiltration factors developed by the Department of Energy, R values, building dimensions, and cooling and heating degree days, a contractor has formulated methodologies for estimating British Thermal Unit (BTU) and kilowatt hour (KwH) consumption rates, and costs, for heating and cooling. The relevant portions of the methodology are explained below.

C. SPACE HEATING (FOSSIL FUEL) CONSUMPTION/COST CALCULATIONS

To illustrate the procedure for calculating the cost of heating with fossil fuel, a single story 1,850 square foot house, with no basement, located near Aberdeen, SD will be used as an example.

1. The first step is to select from among Tables 9a through 9f, the table that most closely describes the quarters unit at issue. In this case, Table 9a is for a 1-story, single-family house with a partial (50 percent or less) or no basement (Prototype I). When determining the prototype, use the total basement (finished and unfinished) square footage. Unfinished space is only considered when determining the prototype. It is never used when using a rent setting or consumption chart. Table 9a should be selected in this example.

2. The second step is to determine the number of BTU's consumed **annually** for heating the house used in this example. Select from Table 9a the annual MBTU (million BTU's) consumption appropriate for the heating degree days (HDD's) and the gross **finished** square footage of the house in this example. Use the table as shown below.

   a. Find the number of HDD's for the established community near which the quarters are located. Table 10 contains the HDD's for the nearest established communities in the Plains survey region; this table shows that Aberdeen, SD has 8,348 HDD's. In Table 9a, 8,348 HDD's lies between the columns headed **"8,000"** and **"8,350."** Round 8,348 HDD's down to 8,000 HDD's.

   b. In Table 9a, 1,850 square feet (the size of the house used in the example) lies between 1,800 and 2,000 square feet; round 1,850 down to 1,800 square feet.

   c. From Table 9a (1,800 square feet and 8,000 HDD's) the annual MBTU consumption rate is 120.5 MBTU's.

3. The third step is to calculate the amount of fossil fuel needed to produce 120.5 MBTU's. Table 11 shows the amount of fossil fuel needed to produce 1 MBTU. The total amount of heating fuel required to produce 120.5 MBTU's is computed by multiplying the appropriate fuel factor in Table 11 by the number of MBTU's. In this case the fuel required is:

Natural gas:	120.5 MBTU's x 1 MCF	=	120.5 MCF.
Propane:	120.5 MBTU's x 10.2 gallons	=	1,229.10 gallons
Fuel oil:	120.5 MBTU's x 7.04 gallons	=	848.32 gallons

4. The fourth step is to calculate the annual cost of the fuel consumed. This can be done by multiplying the annual fuel consumption by the unit fuel charges shown in Table 12. Following this procedure, the charge for fuel consumed annually to produce 120.5 MBTU's is:

Natural gas:	120.5 MCF x $7.00 (per MCF)	=	$843.50
Propane:	1,229.10 gallons x $0.77(per gallon)	=	$946.41
Fuel oil:	848.32 gallons x $0.97 (per gallon)	=	$822.87

5. The fifth step is to calculate the monthly charge for fossil heating fuel. This is done simply by dividing the annual charges (above) by 12 (months). In this manner the monthly charges are: natural gas = $70.29; propane = $78.87 and fuel oil = $68.57.

6. The final step is to multiply the monthly charge (computed in step 5 above) by the appropriate HUD MPS Heating Zone conversion factor (Table 13). In order to use Table 13, it is first necessary to determine the HUD MPS Zone for the community at issue (Aberdeen, SD). Table 10 shows the HUD MPS Zones for the nearest established communities located within the Plains survey region. From Table 10, it can be seen that Aberdeen, SD is in MPS Zone 8. The conversion factor can now be found in Table 13. The conversion factor for a single story dwelling with no basement (Prototype I) in HUD MPS Zone 8 is 1.00. Multiply the monthly charges determined in step 5 above by 1.00 (the conversion factor). In this manner, the heating fuel charge can be computed for any quarters unit in any community or location. In this example, the final monthly fossil fuel heating costs are $70.29 ($70.29 x 1.00) for natural gas, $78.87 ($78.87 x 1.00) for propane and $68.57 ($68.57 x 1.00) for fuel oil.

The above example pertained to a single story dwelling with a partial (50 percent or less) or no basement. When calculating the heating fuel charge for a different type of housing (including apartments and mobile homes), use the Table (9a through f) which most closely describes the quarters unit to compute the annual MBTU consumption.

TABLE 9a ANNUAL MBTU USAGE (MILLIONS BTU'S) - PROTOTYPE I
Single Family, One Story, Partial (Less Than 50%) or No Basement

BASELINE CITY, Rapid City, South Dakota

Gross Square Feet	Heating Degree Days																
	4500	4850	5200	5550	5900	6250	6600	6950	7300	7650	8000	8350	8700	9050	9400	9750	10100
100	3.8	4.1	4.4	4.6	4.9	5.2	5.5	5.8	6.1	6.4	6.7	7.0	7.3	7.6	7.9	8.2	8.5
200	7.5	8.1	8.7	9.3	9.9	10.5	11.0	11.6	12.2	12.8	13.4	14.0	14.6	15.1	15.7	16.3	16.9
400	15.1	16.2	17.4	18.6	19.8	20.9	22.1	23.3	24.4	25.6	26.8	28.0	29.1	30.3	31.5	32.6	33.8
600	22.6	24.4	26.1	27.9	29.6	31.4	33.1	34.9	36.7	38.4	40.2	41.9	43.7	45.4	47.2	49.0	50.7
800	30.1	32.5	34.8	37.2	39.5	41.8	44.2	46.5	48.9	51.2	53.6	55.9	58.2	60.6	62.9	65.3	67.6
1000	37.7	40.6	43.5	46.4	49.4	52.3	55.2	58.2	61.1	64.0	67.0	69.9	72.8	75.7	78.7	81.6	84.5
1200	45.2	48.7	52.2	55.7	59.3	62.8	66.3	69.8	73.3	76.8	80.3	83.9	87.4	90.9	94.4	97.9	101.4
1400	52.7	56.8	60.9	65.0	69.1	73.2	77.3	81.4	85.5	89.6	93.7	97.8	101.9	106.0	110.1	114.2	118.3
1600	60.3	64.9	69.6	74.3	79.0	83.7	88.4	93.1	97.8	102.4	107.1	111.8	116.5	121.2	125.9	130.6	135.2
1800	67.8	73.1	78.3	83.6	88.9	94.2	99.4	104.7	110.0	115.2	120.5	125.8	131.1	136.3	141.6	146.9	152.2
2000	75.3	81.2	87.0	92.9	98.8	104.6	110.5	116.3	122.2	128.0	133.9	139.8	145.6	151.5	157.3	163.2	169.1
2200	82.9	89.3	95.7	102.2	108.6	115.1	121.5	128.0	134.4	140.9	147.3	153.7	160.2	166.6	173.1	179.5	186.0
2400	90.4	97.4	104.4	111.5	118.5	125.5	132.6	139.6	146.6	153.7	160.7	167.7	174.7	181.8	188.8	195.8	202.9
2600	97.9	105.5	113.2	120.8	128.4	136.0	143.6	151.2	158.8	166.5	174.1	181.7	189.3	196.9	204.5	212.2	219.8
2800	105.5	113.7	121.9	130.1	138.3	146.5	154.7	162.9	171.1	179.3	187.5	195.7	203.9	212.1	220.3	228.5	236.7
3000	113.0	121.8	130.6	139.3	148.1	156.9	165.7	174.5	183.3	192.1	200.9	209.6	218.4	227.2	236.0	244.8	253.6

TABLE 9b ANNUAL MBTU USAGE (MILLIONS BTU'S) - PROTOTYPE II
Single Family, Single Story, Full Basement

BASELINE CITY, Rapid City, South Dakota

Gross Square Feet	Heating Degree Days																
	4500	4850	5200	5550	5900	6250	6600	6950	7300	7650	8000	8350	8700	9050	9400	9750	10100
100	3.4	3.7	4.0	4.2	4.5	4.8	5.0	5.3	5.6	5.8	6.1	6.4	6.6	6.9	7.2	7.4	7.7
200	6.9	7.4	7.9	8.5	9.0	9.5	10.1	10.6	11.1	11.7	12.2	12.7	13.3	13.8	14.3	14.9	15.4
400	13.7	14.8	15.9	16.9	18.0	19.1	20.1	21.2	22.3	23.4	24.4	25.5	26.6	27.6	28.7	29.8	30.8
600	20.6	22.2	23.8	25.4	27.0	28.6	30.2	31.8	33.4	35.0	36.6	38.2	39.8	41.4	43.0	44.7	46.3
800	27.5	29.6	31.8	33.9	36.0	38.2	40.3	42.4	44.6	46.7	48.8	51.0	53.1	55.3	57.4	59.5	61.7
1000	34.3	37.0	39.7	42.4	45.0	47.7	50.4	53.0	55.7	58.4	61.1	63.7	66.4	69.1	71.7	74.4	77.1
1200	41.2	44.4	47.6	50.8	54.0	57.2	60.4	63.7	66.9	70.1	73.3	76.5	79.7	82.9	86.1	89.3	92.5
1400	48.1	51.8	55.6	59.3	63.0	66.8	70.5	74.3	78.0	81.7	85.5	89.2	93.0	96.7	100.4	104.2	107.9
1600	55.0	59.2	63.5	67.8	72.1	76.3	80.6	84.9	89.1	93.4	97.7	102.0	106.2	110.5	114.8	119.1	123.3
1800	61.8	66.6	71.4	76.2	81.1	85.9	90.7	95.5	100.3	105.1	109.9	114.7	119.5	124.3	129.1	134.0	138.8
2000	68.7	74.0	79.4	84.7	90.1	95.4	100.7	106.1	111.4	116.8	122.1	127.5	132.8	138.1	143.5	148.8	154.2
2200	75.6	81.4	87.3	93.2	99.1	104.9	110.8	116.7	122.6	128.5	134.3	140.2	146.1	152.0	157.8	163.7	169.6
2400	82.4	88.8	95.3	101.7	108.1	114.5	120.9	127.3	133.7	140.1	146.5	153.0	159.4	165.8	172.2	178.6	185.0
2600	89.3	96.2	103.2	110.1	117.1	124.0	131.0	137.9	144.9	151.8	158.8	165.7	172.6	179.6	186.5	193.5	200.4
2800	96.2	103.6	111.1	118.6	126.1	133.6	141.0	148.5	156.0	163.5	171.0	178.4	185.9	193.4	200.9	208.4	215.8
3000	103.0	111.1	119.1	127.1	135.1	143.1	151.1	159.1	167.2	175.2	183.2	191.2	199.2	207.2	215.2	223.3	231.3

TABLE 9c ANNUAL MBTU USAGE (MILLIONS BTU'S) - PROTOTYPE III
Single Family, Two Story, Partial (Less Than 50%) or No Basement

BASELINE CITY, Rapid City, South Dakota

Gross Square Feet	Heating Degree Days																
	4500	4850	5200	5550	5900	6250	6600	6950	7300	7650	8000	8350	8700	9050	9400	9750	10100
100	3.3	3.6	3.8	4.1	4.3	4.6	4.8	5.1	5.4	5.6	5.9	6.1	6.4	6.6	6.9	7.2	7.4
200	6.6	7.1	7.6	8.1	8.7	9.2	9.7	10.2	10.7	11.2	11.7	12.3	12.8	13.3	13.8	14.3	14.8
400	13.2	14.2	15.3	16.3	17.3	18.3	19.4	20.4	21.4	22.5	23.5	24.5	25.5	26.6	27.6	28.6	29.7
600	19.8	21.4	22.9	24.4	26.0	27.5	29.1	30.6	32.1	33.7	35.2	36.8	38.3	39.9	41.4	42.9	44.5
800	26.4	28.5	30.5	32.6	34.6	36.7	38.8	40.8	42.9	44.9	47.0	49.0	51.1	53.1	55.2	57.2	59.3
1000	33.0	35.6	38.2	40.7	43.3	45.9	48.4	51.0	53.6	56.1	58.7	61.3	63.9	66.4	69.0	71.6	74.1
1200	39.6	42.7	45.8	48.9	52.0	55.0	58.1	61.2	64.3	67.4	70.5	73.5	76.6	79.7	82.8	85.9	89.0
1400	46.2	49.8	53.4	57.0	60.6	64.2	67.8	71.4	75.0	78.6	82.2	85.8	89.4	93.0	96.6	100.2	103.8
1600	52.8	57.0	61.1	65.2	69.3	73.4	77.5	81.6	85.7	89.8	93.9	98.1	102.2	106.3	110.4	114.5	118.6
1800	59.5	64.1	68.7	73.3	77.9	82.6	87.2	91.8	96.4	101.1	105.7	110.3	114.9	119.6	124.2	128.8	133.4
2000	66.1	71.2	76.3	81.5	86.6	91.7	96.9	102.0	107.2	112.3	117.4	122.6	127.7	132.8	138.0	143.1	148.3
2200	72.7	78.3	84.0	89.6	95.3	100.9	106.6	112.2	117.9	123.5	129.2	134.8	140.5	146.1	151.8	157.4	163.1
2400	79.3	85.4	91.6	97.8	103.9	110.1	116.3	122.4	128.6	134.8	140.9	147.1	153.3	159.4	165.6	171.7	177.9
2600	85.9	92.6	99.2	105.9	112.6	119.3	125.9	132.6	139.3	146.0	152.7	159.3	166.0	172.7	179.4	186.1	192.7
2800	92.5	99.7	106.9	114.1	121.3	128.4	135.6	142.8	150.0	157.2	164.4	171.6	178.8	186.0	193.2	200.4	207.6
3000	99.1	106.8	114.5	122.2	129.9	137.6	145.3	153.0	160.7	168.4	176.2	183.9	191.6	199.3	207.0	214.7	222.4

TABLE 9d ANNUAL MBTU USAGE (MILLIONS BTU'S) - PROTOTYPE IV
Single Family, Two Story, Full Basement

BASELINE CITY, Rapid City, South Dakota

Gross Square Feet	Heating Degree Days																
	4500	4850	5200	5550	5900	6250	6600	6950	7300	7650	8000	8350	8700	9050	9400	9750	10100
100	4.1	4.5	4.8	5.1	5.4	5.7	6.1	6.4	6.7	7.0	7.3	7.7	8.0	8.3	8.6	8.9	9.3
200	8.3	8.9	9.5	10.2	10.8	11.5	12.1	12.8	13.4	14.0	14.7	15.3	16.0	16.6	17.3	17.9	18.5
400	16.5	17.8	19.1	20.4	21.7	22.9	24.2	25.5	26.8	28.1	29.4	30.7	31.9	33.2	34.5	35.8	37.1
600	24.8	26.7	28.6	30.6	32.5	34.4	36.3	38.3	40.2	42.1	44.0	46.0	47.9	49.8	51.8	53.7	55.6
800	33.0	35.6	38.2	40.7	43.3	45.9	48.5	51.0	53.6	56.2	58.7	61.3	63.9	66.4	69.0	71.6	74.1
1000	41.3	44.5	47.7	50.9	54.1	57.4	60.6	63.8	67.0	70.2	73.4	76.6	79.8	83.0	86.3	89.5	92.7
1200	49.6	53.4	57.3	61.1	65.0	68.8	72.7	76.5	80.4	84.2	88.1	92.0	95.8	99.7	103.5	107.4	111.2
1400	57.8	62.3	66.8	71.3	75.8	80.3	84.8	89.3	93.8	98.3	102.8	107.3	111.8	116.3	120.8	125.3	129.8
1600	66.1	71.2	76.4	81.5	86.6	91.8	96.9	102.0	107.2	112.3	117.5	122.6	127.7	132.9	138.0	143.2	148.3
1800	74.3	80.1	85.9	91.7	97.5	103.2	109.0	114.8	120.6	126.4	132.1	137.9	143.7	149.5	155.3	161.1	166.8
2000	82.6	89.0	95.4	101.9	108.3	114.7	121.1	127.6	134.0	140.4	146.8	153.3	159.7	166.1	172.5	178.9	185.4
2200	90.8	97.9	105.0	112.0	119.1	126.2	133.2	140.3	147.4	154.4	161.5	168.6	175.6	182.7	189.8	196.8	203.9
2400	99.1	106.8	114.5	122.2	129.9	137.7	145.4	153.1	160.8	168.5	176.2	183.9	191.6	199.3	207.0	214.7	222.4
2600	107.4	115.7	124.1	132.4	140.8	149.1	157.5	165.8	174.2	182.5	190.9	199.2	207.6	215.9	224.3	232.6	241.0
2800	115.6	124.6	133.6	142.6	151.6	160.6	169.6	178.6	187.6	196.6	205.6	214.6	223.5	232.5	241.5	250.5	259.5
3000	123.9	133.5	143.2	152.8	162.4	172.1	181.7	191.3	201.0	210.6	220.2	229.9	239.5	249.1	258.8	268.4	278.1

TABLE 9e ANNUAL MBTU USAGE (MILLIONS BTU'S) - PROTOTYPE V
Apartments

BASELINE CITY, Rapid City, South Dakota

Gross Square Feet	Heating Degree Days																
	4500	4850	5200	5550	5900	6250	6600	6950	7300	7650	8000	8350	8700	9050	9400	9750	10100
100	2.4	2.6	2.8	3.0	3.2	3.4	3.6	3.8	3.9	4.1	4.3	4.5	4.7	4.9	5.1	5.3	5.5
200	4.9	5.2	5.6	6.0	6.4	6.8	7.1	7.5	7.9	8.3	8.6	9.0	9.4	9.8	10.2	10.5	10.9
400	9.7	10.5	11.2	12.0	12.8	13.5	14.3	15.0	15.8	16.5	17.3	18.1	18.8	19.6	20.3	21.1	21.8
600	14.6	15.7	16.9	18.0	19.1	20.3	21.4	22.5	23.7	24.8	25.9	27.1	28.2	29.3	30.5	31.6	32.8
800	19.5	21.0	22.5	24.0	25.5	27.0	28.5	30.1	31.6	33.1	34.6	36.1	37.6	39.1	40.6	42.2	43.7
1000	24.3	26.2	28.1	30.0	31.9	33.8	35.7	37.6	39.5	41.3	43.2	45.1	47.0	48.9	50.8	52.7	54.6
1200	29.2	31.5	33.7	36.0	38.3	40.5	42.8	45.1	47.3	49.6	51.9	54.2	56.4	58.7	61.0	63.2	65.5
1400	34.1	36.7	39.3	42.0	44.6	47.3	49.9	52.6	55.2	57.9	60.5	63.2	65.8	68.5	71.1	73.8	76.4
1600	38.9	41.9	45.0	48.0	51.0	54.0	57.1	60.1	63.1	66.2	69.2	72.2	75.2	78.3	81.3	84.3	87.3
1800	43.8	47.2	50.6	54.0	57.4	60.8	64.2	67.6	71.0	74.4	77.8	81.2	84.6	88.0	91.5	94.9	98.3
2000	48.6	52.4	56.2	60.0	63.8	67.6	71.3	75.1	78.9	82.7	86.5	90.3	94.0	97.8	101.6	105.4	109.2
2200	53.5	57.7	61.8	66.0	70.2	74.3	78.5	82.6	86.8	91.0	95.1	99.3	103.4	107.6	111.8	115.9	120.1
2400	58.4	62.9	67.5	72.0	76.5	81.1	85.6	90.2	94.7	99.2	103.8	108.3	112.9	117.4	121.9	126.5	131.0
2600	63.2	68.2	73.1	78.0	82.9	87.8	92.7	97.7	102.6	107.5	112.4	117.3	122.3	127.2	132.1	137.0	141.9
2800	68.1	73.4	78.7	84.0	89.3	94.6	99.9	105.2	110.5	115.8	121.1	126.4	131.7	137.0	142.3	147.6	152.8
3000	73.0	78.6	84.3	90.0	95.7	101.3	107.0	112.7	118.4	124.0	129.7	135.4	141.1	146.7	152.4	158.1	163.8

TABLE 9f ANNUAL MBTU USAGE (MILLIONS BTU'S) - PROTOTYPE VI
Mobile Homes

BASELINE CITY, Rapid City, South Dakota

Gross Square Feet	Heating Degree Days																
	4500	4850	5200	5550	5900	6250	6600	6950	7300	7650	8000	8350	8700	9050	9400	9750	10100
100	4.3	4.7	5.0	5.3	5.7	6.0	6.3	6.7	7.0	7.3	7.7	8.0	8.3	8.7	9.0	9.4	9.7
200	8.6	9.3	10.0	10.6	11.3	12.0	12.7	13.3	14.0	14.7	15.4	16.0	16.7	17.4	18.0	18.7	19.4
400	17.3	18.6	20.0	21.3	22.6	24.0	25.3	26.7	28.0	29.4	30.7	32.0	33.4	34.7	36.1	37.4	38.8
600	25.9	27.9	29.9	31.9	34.0	36.0	38.0	40.0	42.0	44.0	46.1	48.1	50.1	52.1	54.1	56.1	58.1
800	34.5	37.2	39.9	42.6	45.3	48.0	50.7	53.3	56.0	58.7	61.4	64.1	66.8	69.5	72.1	74.8	77.5
1000	43.2	46.5	49.9	53.2	56.6	60.0	63.3	66.7	70.0	73.4	76.8	80.1	83.5	86.8	90.2	93.5	96.9
1200	51.8	55.8	59.9	63.9	67.9	72.0	76.0	80.0	84.0	88.1	92.1	96.1	100.2	104.2	108.2	112.2	116.3
1400	60.4	65.1	69.8	74.5	79.2	83.9	88.6	93.3	98.0	102.8	107.5	112.2	116.9	121.6	126.3	131.0	135.7
1600	69.1	74.4	79.8	85.2	90.6	95.9	101.3	106.7	112.1	117.4	122.8	128.2	133.5	138.9	144.3	149.7	155.0
1800	77.7	83.8	89.8	95.8	101.9	107.9	114.0	120.0	126.1	132.1	138.2	144.2	150.2	156.3	162.3	168.4	174.4
2000	86.3	93.1	99.8	106.5	113.2	119.9	126.6	133.4	140.1	146.8	153.5	160.2	166.9	173.6	180.4	187.1	193.8
2200	95.0	102.4	109.8	117.1	124.5	131.9	139.3	146.7	154.1	161.5	168.9	176.2	183.6	191.0	198.4	205.8	213.2
2400	103.6	111.7	119.7	127.8	135.8	143.9	152.0	160.0	168.1	176.1	184.2	192.3	200.3	208.4	216.4	224.5	232.6
2600	112.2	121.0	129.7	138.4	147.2	155.9	164.6	173.4	182.1	190.8	199.6	208.3	217.0	225.7	234.5	243.2	251.9
2800	120.9	130.3	139.7	149.1	158.5	167.9	177.3	186.7	196.1	205.5	214.9	224.3	233.7	243.1	252.5	261.9	271.3
3000	129.5	139.6	149.7	159.7	169.8	179.9	190.0	200.0	210.1	220.2	230.3	240.3	250.4	260.5	270.5	280.6	290.7

TABLE 10 HEATING/COOLING DEGREE DAYS AND MPS ZONES

Community	Heating Degree Days	Cooling Degree Days	HUD MPS Zone
COLORADO			
Burlington, CO	6,261	779	7
KANSAS			
Beliot, KS	5,318	1,482	7
Elkhart, KS	4,941	1,310	5
Great Bend, KS	4,782	1,580	5
Leavenworth, KS	5,331	1,356	7
Norton, KS	5,608	1,202	7
Phillipsburgh, KS	5,835	1,259	7
Topeka, KS	5,225	1,357	7
Wakeeney, KS	5,488	1,315	6
MISSOURI			
Butler, MO	4,953	1,420	5
NEBRASKA			
Alliance, NE	6,823	719	8
Beatrice, NE	6,151	1,124	6
Blair, NE	6,455	962	7
Broken Bow, NE	7,259	620	7
Gering, NE	6,742	690	7
Gordon, NE	7,611	587	7
Grand Island, NE	6,385	1027	7
Imperial, NE	6,472	830	7
Lincoln, NE	6,242	1,154	6
McCook, NE	5,967	1,037	7
Mitchell, NE	6,713	655	7
S Sioux City, NE	6,520	1,018	7
Superior, NE	5,552	1,273	6
Valentine, NE	7,255	779	7

TABLE 10 HEATING/COOLING DEGREE DAYS AND MPS ZONES

Community	Heating Degree Days	Cooling Degree Days	HUD MPS Zone
NORTH DAKOTA			
Bismark, ND	8,802	471	8
Bottineau, ND	10,288	350	8
Carrington, ND	9,560	408	8
Cavalier, ND	10,195	352	8
Devils Lake, ND	9,424	469	8
Dickinson, ND	8,558	512	8
Fargo, ND	9,092	533	8
Hazen, ND	8,696	549	8
Jamestown, ND	9,512	497	8
Langdon, ND	10,845	285	8
Mandan, ND	8,909	511	8
Minot, ND	8,990	492	8
Oakes, ND	9,064	547	8
Valley City, ND	9,561	383	8
Wahpeton, ND	8,564	668	8
Williston, ND	9,044	463	8
SOUTH DAKOTA			
Aberdeen, SD	8,348	626	8
Belle Fourche, SD	6,995	680	8
Chamberlain, SD	7,484	801	8
Custer, SD	7,936	275	8
Flandreau, SD	8,405	574	8
Hot Springs, SD	6,984	576	8
Mitchell, SD	7,622	791	8
Mobridge, SD	7,984	720	8
Pierre, SD	7,282	919	8
Rapid City, SD	7,211	598	8
Sisseton, SD	8,302	628	8
Spearfish, SD	7,133	608	8
Sturgis, SD	8,132	331	8
Webster, SD	8,685	575	8
Yankton, SD	7,179	849	7

TABLE 11 FUEL REQUIRED TO PRODUCE 1 MBTU

Type of Fuel	Amount Needed To Produce 1 MBTU
Natural Gas	1 MCF (1,000 cu. ft.)
Propane	10.2 Gallons
Fuel Oil	7.04 Gallons

TABLE 12 HEATING FUEL COST

Type of Fuel	Charge per unit
Natural Gas	$7.00
Propane	$0.77
Fuel Oil #2	$0.97

TABLE 13 MPS HEATING ZONE CONVERSION FACTORS

	Dwelling Prototypes					
	I	II	III	IV	V	VI
HUD MPS Heating Zone	Single Story No Basement	Single Story Full Basement	Double Story No Basement	Double Story Full Basement	Apart-ments	Mobile Homes
1						
2						
3						
4						
5	1.04	1.12	1.04	1.10	1.41	1.03
6	1.08	1.17	1.08	1.13	1.11	1.06
7	1.00	1.08	1.00	1.06	1.00	1.00
8	1.00	1.00	1.00	1.00	1.00	1.00

D. SPACE HEATING (ELECTRICITY) CONSUMPTION/COST CALCULATIONS

The procedure for calculating electrical consumption and costs for space heating (where electricity is unmetered or otherwise unmeasured) is similar to the procedure used for fossil fuels. Tables 14a through 14f are used.

1. Select from these tables the dwelling prototype most similar to the quarters at issue.

2. Determine the annual kilowatt hour (KwH) consumption by finding the appropriate columns for square feet and HDD (heating degree days). Note: HDD's for the nearest established communities may be found in Table 10.

3. Divide the annual KwH by 12 to determine the monthly average electrical consumption.

4. Adjust for HUD MPS Heating Zone, using the conversion factors in Table 13.

5. Adjust for heat pump (if applicable).

6. Determine the appropriate charge per KwH from the table below. **Do not calculate the total cost of electricity in steps such as the first 500 KwH costs so much, then the second 500 KwH costs so much etc.**

KwH Consumed Per Month	Charge per KwH
1 -500	$.084
501 - 1,000	$.076
1,001 -1,500	$.070
Over 1,500	$.067

7. Compute the monthly charge for space heating by multiplying the appropriate charge per KwH times the number of KwH consumed per month.

8. Example: The average monthly electric heating charge for a single family, 2,100 square foot, two story, no basement home located near Broken Bow, NE is computed as follows:

   a. Step 1. Select the table (table 14a through f) that most closely describes the quarters unit at issue. In this case, table 14c (single family, two story, no basement - prototype III) should be selected.

   b. Step 2. Determine from table 14c the annual KwH consumption appropriate for the heating degree days (HDD) and the gross square footage of the house in this example. Use the table as follows:

      1) Find the number of heating degree days for the established community in which the quarters is located. Table 10 (which contains the HDD for established communities in the Plains survey region) shows that Broken Bow, NE has 7,259 HDD. In table 14c, the number of

HDD's in Broken Bow, NE (7,259) lies between the column headed 7,000 and the column headed 7,500. Round down to 7,000 HDD.

2) In table 14c, 2,100 square feet (the size of the house used in this example) lies between 2,000 and 2,200 square feet. Round 2,100 down to 2,000 square feet.

3) From table 14c (2,000 square feet and 7,000 HDD) the annual KwH consumption rate is 24,085 KwH.

c. Step 3. Calculate the monthly KwH consumption by dividing the annual KwH by 12 (months). In this instance, the monthly consumption is 2,007.08 KwH (24,085 / 12 = 2,007.08).

d. Step 4, HUD MPS Zone adjustment. The HUD MPS zone adjustment is made as follows:

1) Use Table 10 to find the HUD MPS zone for the community at issue. In this manner, Broken Bow, NE is found to be in HUD MPS zone 7.

2) In Table 13, determine the adjustment factor for the appropriate dwelling type and MPS zone. The factor for housing prototype III in HUD MPS zone 7 is 1.00.

3) Multiply the monthly electric consumption (as computed in paragraph 8c, above) times the HUD MPS adjustment factor (2,007.08 x 1.00 = 2,007.08 KwH per month).

e. Step 5, **Adjustment for heat pump**. The process described above is used for computing the electrical consumption for heating with a straight resistance heating system. Where a dwelling is heated with an electric heat pump, the straight resistance heating consumption (2,007.08 KwH in this example) should be multiplied by a factor of .75, which represents the greater efficiency of the heat pump. In this example, the monthly electric consumption for a heat pump as the heating source would be 1,505.31 (2,007.08 x .75 = 1,505.31).

f. Step 6. The final step is to compute the monthly charge for the electricity consumed. This is done by multiplying the charge per KwH times the KwH consumed per month. The appropriate charge per KwH may be found in the table below.

KwH Consumed Per Month	Charge per KwH
1 -500	$.084
501 - 1,000	$.076
1,001 - 1,500	$.070
Over 1,500	$.067

In this example, the average monthly consumption (2,007.08 KwH) for resistance heat falls in the "Over 1,500" KwH per month consumption category; the appropriate charge is $0.067 per KwH. The average monthly consumption (1,505.31 KwH) for a heat pump falls in the "Over 1,500" KwH per month consumption category; and the appropriate unit charge is $0.067 per KwH.

Therefore, the monthly electric heating charge for the house used in this example is computed as follows:

Resistance heat: 2,007.08 KwH x $.067 = $134.47

Heat pump: 1,505.31 KwH x $.067 = $100.86

E. SPACE COOLING CONSUMPTION/COST

Space cooling costs are calculated in the same manner as for electric space heating except that CDD (Cooling Degree Day) values are used in lieu of HDD values. CDD values for the Nearest Established Communities are found in Table 10. Additionally, only Tables 14a through 14f are used in calculating cooling energy consumption. Briefly, the steps are as follows.

1. Select from Tables 14a through 14f, the table that most closely describes the quarters unit at issue.

2. Based on the size of the dwelling (square feet) and the number of CDD (from Table 10), use the appropriate Table (14a-f) to determine the annual KwH consumption.

3. Divide the annual KwH consumption by 12 (months) to determine the average number of KwH consumed per month.

4. Apply the HUD MPS Zone adjustment factor.

5. Apply the Coefficient of Performance (COP) adjustment.

6. Determine the appropriate charge per KwH from the table below.

KwH Consumed Per Month	Charge per KwH
1 - 500	$.084
501 - 1,000	$.076
1,001 - 1,500	$.070
Over 1,500	$.067

7. Compute the monthly charge for space cooling by multiplying the appropriate charge per KwH times the number of KwH consumed per month.

8. Example: Compute the average monthly electric cooling charge for a 1,275 SQFT mobile home near Wakeeney, KS.

   a. STEP 1: Table Selection. Select the table (table 14a through 14f), which most closely describes the quarters unit at issue. Table 14f (Mobile Home - prototype VI) should be selected.

   b. STEP 2: Annual KwH Consumption. Determine from table 14f the annual KwH consumption appropriate for the cooling degree days (CDD) and the gross square footage of the mobile home in this example. Use the table as follows:

      1) Find the number of cooling degree days for the established community closest to the quarters. Table 10 (which contains the CDD for established communities in the Plains survey region) shows that Wakeeney, KS has 1,315 CDD. In table 14f, 1,315 CDD lies between the columns headed 1,200 and 1,500. Round down to 1,200 CDD.

      2) In table 14f, 1,275 square feet (the size of the mobile home used in this example) lies between 1,200 and 1,400 square feet. Round down to 1,200 square feet.

      3) From table 14f (1,200 square feet and 1,200 CDD) the annual KwH consumption rate is 3,238 KwH.

   c. STEP 3: Monthly Consumption. Calculate the monthly KwH consumption by dividing the annual KwH consumption by 12 (months). In this instance, the monthly consumption is 269.83 KwH rounded (3,238 / 12 = 269.83).

   d. STEP 4: HUD MPS Zone Adjustment. The HUD MPS Zone adjustment is made as follows:

      1) Use Table 10 to find the HUD MPS zone for the community at issue. In this manner, Wakeeney, KS is found to be in HUD MPS Zone 6.

      2) In Table 15, determine the adjustment factor for the appropriate dwelling unit type and MPS zone. The factor for housing prototype VI in HUD MPS zone 6 is 2.23.

3) Multiply the monthly electric consumption (as computed in paragraph 8c, above) times the HUD MPS Zone adjustment factor 269.83 x 2.23 = 601.72 KwH per month.

e. STEP 5: Adjustment for Coefficient of Performance (COP). This adjustment accounts for the differences in the efficiencies of evaporative (swamp) and refrigerated air central cooling systems.

1) Evaporative (swamp) cooling. For a central evaporative cooling system the adjusted KwH (computed in Step 4, above) is divided by a factor of 6.66. In this example, the monthly KwH requirement for central evaporative cooling is computed as 601.72 / 6.66 = 90.35 KwH per month.

2) Refrigerated air cooling. For a central refrigerated air cooling system, the adjusted KwH (computed in step 4, above) is divided by a factor of 2. In this example, the monthly KwH requirement for central refrigerated air cooling is computed as 601.72 / 2 = 300.86 KwH per month.

f. STEP 6: Monthly Charge. The final step is to compute the monthly charge for the electricity consumed. This is done by multiplying the charge per KwH times the KwH consumed per month. The appropriate charge per KwH may be found in the table below.

KwH Consumed Per Month	Charge per KwH
1 - 500	$.084
501 - 1,000	$.076
1,001 - 1,500	$.070
Over 1,500	$.067

In this example, the average monthly consumption (90.35 KwH) for evaporative cooling falls in the "1 – 500" KwH consumption range. And (300.86 KwH) for refrigerated cooling falls in the "1 – 500" KwH consumption range. The appropriate charge will be $0.084 per KwH for evaporative cooling and $.084 for refrigerated cooling.

Therefore, the monthly charges for cooling the mobile home used in this example would be computed as follows.

Evaporative cooling: 90.35 KwH x $0.084 = $7.59

Refrigerated cooling: 300.86 KwH x $0.084 = $25.27

9. Gas powered Central Air Conditioning Units. If the central air conditioning unit is gas operated (natural gas or propane), the charge is computed as follows:

a. Compute the KwH consumption in same manner as shown in steps 1 through 4 above (Note: the calculations through step 4 produce 601.72 KwH per month).

b. Calculate the Coefficient of Performance (COP) adjustment in step 5 above for refrigerated air conditioning; that is, divide the number of KwH in paragraph 9a, above (601.72 KwH) by the COP (2); for example 601.72 / 2 = 300.86 KwH.

c. Convert the monthly KwH to MBTU's by dividing the KwH calculated in paragraph 9b, above by 234.4. Thus, 300.86 KwH / 234.4 (KwH per MBTU) = 1.28 MBTU's. [It takes 234.4 Kilowatts to generate 1 MBTU]

d. Calculate the volumes of natural gas and propane needed to produce 1.28 MBTU's. This is done as follows.

1) Natural Gas. For central air conditioning units that operate on natural gas, multiply the MBTU's calculated in paragraph 9c above by 1 MCF (1.28 MBTU's x 1 MCF = 1.28 MCF). Thus, 1.28 MCF of natural gas would be required per month (annual average) to cool the dwelling in this example.

2) Propane. For central air conditioning units that operate on propane gas, multiply the MBTU's calculated in paragraph 9c above by 10.2 gallons (1.28 MBTU's x 10.2 gallons = 13.06 gallons). Thus, 13.06 gallons of propane would be required per month (annual average) to cool the dwelling in this example.

e. Calculate the monthly charge for natural gas or propane consumed. This is done by multiplying the volume of fuel consumed by the unit cost of the fuel. These calculations are shown below.

Natural gas: 1.28 MCF x $7.00 per MCF = $8.96 (rounded) per month.

Propane gas: 13.06 gallons x $0.77 per gallon = $1.01 (rounded) per month.

TABLE 14a ANNUAL KwH USAGE (ELECTRIC HEATING/COOLING) - PROTOTYPE I
Single Family, One Story, Partial (Less Than 50%) or No Basement

BASELINE CITY, Rapid City, South Dakota

Gross Square Feet	Heating or Cooling Degree Days																
	300	600	900	1200	1500	4500	5000	5500	6000	6500	7000	7500	8000	8500	9000	9500	10100
100	59	118	177	235	294	883	981	1079	1177	1275	1373	1471	1569	1667	1766	1864	1981
200	118	235	353	471	589	1766	1962	2158	2354	2550	2746	2943	3139	3335	3531	3727	3963
400	235	471	706	942	1177	3531	3923	4316	4708	5100	5493	5885	6277	6670	7062	7454	7925
600	353	706	1059	1412	1766	5297	5885	6474	7062	7651	8239	8828	9416	10005	10593	11182	11888
800	471	942	1412	1883	2354	7062	7847	8632	9416	10201	10986	11770	12555	13340	14124	14909	15851
1000	589	1177	1766	2354	2943	8828	9809	10789	11770	12751	13732	14713	15694	16674	17655	18636	19813
1200	706	1412	2119	2825	3531	10593	11770	12947	14124	15301	16478	17655	18832	20009	21186	22363	23776
1400	824	1648	2472	3296	4120	12359	13732	15105	16478	17852	19225	20598	21971	23344	24717	26091	27739
1600	942	1883	2825	3766	4708	14124	15694	17263	18832	20402	21971	23540	25110	26679	28249	29818	31701
1800	1059	2119	3178	4237	5297	15890	17655	19421	21186	22952	24717	26483	28249	30014	31780	33545	35664
2000	1177	2354	3531	4708	5885	17655	19617	21579	23540	25502	27464	29426	31387	33349	35311	37272	39626
2200	1295	2589	3884	5179	6474	19421	21579	23737	25895	28052	30210	32368	34526	36684	38842	41000	43589
2400	1412	2825	4237	5650	7062	21186	23540	25895	28249	30603	32957	35311	37665	40019	42373	44727	47552
2600	1530	3060	4590	6121	7651	22952	25502	28052	30603	33153	35703	38253	40803	43354	45904	48454	51514
2800	1648	3296	4943	6591	8239	24717	27464	30210	32957	35703	38449	41196	43942	46689	49435	52181	55477
3000	1766	3531	5297	7062	8828	26483	29426	32368	35311	38253	41196	44138	47081	50023	52966	55909	59440

TABLE 14b ANNUAL KwH USAGE (ELECTRIC HEATING/COOLING) - PROTOTYPE II
Single Family, Single Story, Full Basement

BASELINE CITY, Rapid City, South Dakota

Gross Square Feet	Heating or Cooling Degree Days																
	300	600	900	1200	1500	4500	5000	5500	6000	6500	7000	7500	8000	8500	9000	9500	10100
100	54	107	161	215	268	805	895	984	1073	1163	1252	1342	1431	1521	1610	1700	1807
200	107	215	322	429	537	1610	1789	1968	2147	2326	2505	2684	2862	3041	3220	3399	3614
400	215	429	644	859	1073	3220	3578	3936	4294	4652	5009	5367	5725	6083	6441	6798	7228
600	322	644	966	1288	1610	4830	5367	5904	6441	6977	7514	8051	8587	9124	9661	10198	10842
800	429	859	1288	1717	2147	6441	7156	7872	8587	9303	10019	10734	11450	12165	12881	13597	14455
1000	537	1073	1610	2147	2684	8051	8945	9840	10734	11629	12523	13418	14312	15207	16101	16996	18069
1200	644	1288	1932	2576	3220	9661	10734	11808	12881	13955	15028	16101	17175	18248	19322	20395	21683
1400	751	1503	2254	3006	3757	11271	12523	13776	15028	16280	17533	18785	20037	21290	22542	23794	25297
1600	859	1717	2576	3435	4294	12881	14312	15744	17175	18606	20037	21469	22900	24331	25762	27193	28911
1800	966	1932	2898	3864	4830	14491	16101	17712	19322	20932	22542	24152	25762	27372	28982	30593	32525
2000	1073	2147	3220	4294	5367	16101	17890	19679	21469	23258	25047	26836	28625	30414	32203	33992	36139
2200	1181	2362	3542	4723	5904	17712	19679	21647	23615	25583	27551	29519	31487	33455	35423	37391	39753
2400	1288	2576	3864	5152	6441	19322	21469	23615	25762	27909	30056	32203	34350	36496	38643	40790	43366
2600	1395	2791	4186	5582	6977	20932	23258	25583	27909	30235	32561	34886	37212	39538	41864	44189	46980
2800	1503	3006	4508	6011	7514	22542	25047	27551	30056	32561	35065	37570	40075	42579	45084	47589	50594
3000	1610	3220	4830	6441	8051	24152	26836	29519	32203	34886	37570	40253	42937	45621	48304	50988	54208

TABLE 14c ANNUAL KwH USAGE (ELECTRIC HEATING/COOLING) - PROTOTYPE III
Single Family, Two Story, Partial (Less Than 50%) or No Basement

BASELINE CITY, Rapid City, South Dakota

Gross Square Feet	Heating or Cooling Degree Days																	
	300	600	900	1200	1500	4500	5000	5500	6000	6500	7000	7500	8000	8500	9000	9500	10100
100	52	103	155	206	258	774	860	946	1032	1118	1204	1290	1376	1462	1548	1634	1738
200	103	206	310	413	516	1548	1720	1892	2064	2237	2409	2581	2753	2925	3097	3269	3475
400	206	413	619	826	1032	3097	3441	3785	4129	4473	4817	5161	5505	5849	6193	6537	6950
600	310	619	929	1239	1548	4645	5161	5677	6193	6710	7226	7742	8258	8774	9290	9806	10426
800	413	826	1239	1652	2064	6193	6882	7570	8258	8946	9634	10322	11011	11699	12387	13075	13901
1000	516	1032	1548	2064	2581	7742	8602	9462	10322	11183	12043	12903	13763	14623	15484	16344	17376
1200	619	1239	1858	2477	3097	9290	10322	11355	12387	13419	14451	15484	16516	17548	18580	19612	20851
1400	723	1445	2168	2890	3613	10838	12043	13247	14451	15656	16860	18064	19268	20473	21677	22881	24326
1600	826	1652	2477	3303	4129	12387	13763	15139	16516	17892	19268	20645	22021	23397	24774	26150	27802
1800	929	1858	2787	3716	4645	13935	15484	17032	18580	20129	21677	23225	24774	26322	27870	29419	31277
2000	1032	2064	3097	4129	5161	15484	17204	18924	20645	22365	24085	25806	27526	29247	30967	32687	34752
2200	1135	2271	3406	4542	5677	17032	18924	20817	22709	24602	26494	28386	30279	32171	34064	35956	38227
2400	1239	2477	3716	4955	6193	18580	20645	22709	24774	26838	28903	30967	33032	35096	37160	39225	41702
2600	1342	2684	4026	5368	6710	20129	22365	24602	26838	29075	31311	33548	35784	38021	40257	42494	45178
2800	1445	2890	4335	5781	7226	21677	24085	26494	28903	31311	33720	36128	38537	40945	43354	45762	48653
3000	1548	3097	4645	6193	7742	23225	25806	28386	30967	33548	36128	38709	41289	43870	46451	49031	52128

TABLE 14d ANNUAL KwH USAGE (ELECTRIC HEATING/COOLING) - PROTOTYPE IV
Single Family, Two Story, Full Basement

BASELINE CITY, Rapid City, South Dakota

Gross Square Feet	Heating or Cooling Degree Days																	
	300	600	900	1200	1500	4500	5000	5500	6000	6500	7000	7500	8000	8500	9000	9500	10100
100	65	129	194	258	323	968	1076	1183	1291	1398	1506	1613	1721	1828	1936	2043	2173
200	129	258	387	516	645	1936	2151	2366	2581	2796	3011	3227	3442	3657	3872	4087	4345
400	258	516	774	1032	1291	3872	4302	4732	5162	5593	6023	6453	6883	7313	7744	8174	8690
600	387	774	1162	1549	1936	5808	6453	7098	7744	8389	9034	9680	10325	10970	11615	12261	13035
800	516	1032	1549	2065	2581	7744	8604	9464	10325	11185	12046	12906	13766	14627	15487	16348	17380
1000	645	1291	1936	2581	3227	9680	10755	11831	12906	13982	15057	16133	17208	18284	19359	20435	21725
1200	774	1549	2323	3097	3872	11615	12906	14197	15487	16778	18068	19359	20650	21940	23231	24522	26070
1400	903	1807	2710	3614	4517	13551	15057	16563	18068	19574	21080	22586	24091	25597	27103	28608	30415
1600	1032	2065	3097	4130	5162	15487	17208	18929	20650	22371	24091	25812	27533	29254	30975	32695	34760
1800	1162	2323	3485	4646	5808	17423	19359	21295	23231	25167	27103	29039	30975	32910	34846	36782	39105
2000	1291	2581	3872	5162	6453	19359	21510	23661	25812	27963	30114	32265	34416	36567	38718	40869	43450
2200	1420	2839	4259	5679	7098	21295	23661	26027	28393	30759	33126	35492	37858	40224	42590	44956	47795
2400	1549	3097	4646	6195	7744	23231	25812	28393	30975	33556	36137	38718	41299	43881	46462	49043	52141
2600	1678	3356	5033	6711	8389	25167	27963	30759	33556	36352	39148	41945	44741	47537	50334	53130	56486
2800	1807	3614	5421	7227	9034	27103	30114	33126	36137	39148	42160	45171	48183	51194	54205	57217	60831
3000	1936	3872	5808	7744	9680	29039	32265	35492	38718	41945	45171	48398	51624	54851	58077	61304	65176

TABLE 14e ANNUAL KwH USAGE (ELECTRIC HEATING/COOLING) - PROTOTYPE V
Apartments

BASELINE CITY, Rapid City, South Dakota

Gross Square Feet	Heating or Cooling Degree Days																
	300	600	900	1200	1500	4500	5000	5500	6000	6500	7000	7500	8000	8500	9000	9500	10100
100	38	76	114	152	190	570	633	697	760	823	887	950	1014	1077	1140	1204	1280
200	76	152	228	304	380	1140	1267	1394	1520	1647	1774	1900	2027	2154	2280	2407	2559
400	152	304	456	608	760	2280	2534	2787	3041	3294	3547	3801	4054	4307	4561	4814	5118
600	228	456	684	912	1140	3421	3801	4181	4561	4941	5321	5701	6081	6461	6841	7221	7677
800	304	608	912	1216	1520	4561	5068	5574	6081	6588	7095	7601	8108	8615	9122	9628	10236
1000	380	760	1140	1520	1900	5701	6334	6968	7601	8235	8868	9502	10135	10769	11402	12035	12796
1200	456	912	1368	1824	2280	6841	7601	8361	9122	9882	10642	11402	12162	12922	13682	14443	15355
1400	532	1064	1596	2128	2660	7981	8868	9755	10642	11529	12416	13302	14189	15076	15963	16850	17914
1600	608	1216	1824	2432	3041	9122	10135	11149	12162	13176	14189	15203	16216	17230	18243	19257	20473
1800	684	1368	2052	2736	3421	10262	11402	12542	13682	14823	15963	17103	18243	19383	20524	21664	23032
2000	760	1520	2280	3041	3801	11402	12669	13936	15203	16470	17736	19003	20270	21537	22804	24071	25591
2200	836	1672	2508	3345	4181	12542	13936	15329	16723	18117	19510	20904	22297	23691	25084	26478	28150
2400	912	1824	2736	3649	4561	13682	15203	16723	18243	19764	21284	22804	24324	25845	27365	28885	30709
2600	988	1976	2965	3953	4941	14823	16470	18117	19764	21410	23057	24704	26351	27998	29645	31292	33269
2800	1064	2128	3193	4257	5321	15963	17736	19510	21284	23057	24831	26605	28378	30152	31926	33699	35828
3000	1140	2280	3421	4561	5701	17103	19003	20904	22804	24704	26605	28505	30405	32306	34206	36106	38387

TABLE 14f ANNUAL KwH USAGE (ELECTRIC HEATING/COOLING) - PROTOTYPE VI
Mobile Homes

BASELINE CITY, Rapid City, South Dakota

Gross Square Feet	Heating or Cooling Degree Days																
	300	600	900	1200	1500	4500	5000	5500	6000	6500	7000	7500	8000	8500	9000	9500	10100
100	67	135	202	270	337	1012	1124	1237	1349	1462	1574	1687	1799	1911	2024	2136	2271
200	135	270	405	540	675	2024	2249	2474	2699	2923	3148	3373	3598	3823	4048	4273	4543
400	270	540	810	1079	1349	4048	4498	4947	5397	5847	6297	6746	7196	7646	8096	8545	9085
600	405	810	1214	1619	2024	6072	6746	7421	8096	8770	9445	10120	10794	11469	12143	12818	13628
800	540	1079	1619	2159	2699	8096	8995	9895	10794	11694	12593	13493	14392	15292	16191	17091	18170
1000	675	1349	2024	2699	3373	10120	11244	12368	13493	14617	15741	16866	17990	19115	20239	21363	22713
1200	810	1619	2429	3238	4048	12143	13493	14842	16191	17541	18890	20239	21588	22938	24287	25636	27255
1400	944	1889	2833	3778	4722	14167	15741	17316	18890	20464	22038	23612	25186	26761	28335	29909	31798
1600	1079	2159	3238	4318	5397	16191	17990	19789	21588	23387	25186	26985	28784	30583	32382	34182	36340
1800	1214	2429	3643	4857	6072	18215	20239	22263	24287	26311	28335	30359	32382	34406	36430	38454	40883
2000	1349	2699	4048	5397	6746	20239	22488	24737	26985	29234	31483	33732	35981	38229	40478	42727	45425
2200	1484	2968	4453	5937	7421	22263	24737	27210	29684	32158	34631	37105	39579	42052	44526	47000	49968
2400	1619	3238	4857	6476	8096	24287	26985	29684	32382	35081	37780	40478	43177	45875	48574	51272	54511
2600	1754	3508	5262	7016	8770	26311	29234	32158	35081	38004	40928	43851	46775	49698	52622	55545	59053
2800	1889	3778	5667	7556	9445	28335	31483	34631	37780	40928	44076	47224	50373	53521	56669	59818	63596
3000	2024	4048	6072	8096	10120	30359	33732	37105	40478	43851	47224	50598	53971	57344	60717	64090	68138

TABLE 15 MPS COOLING ZONE CONVERSION FACTORS

	Dwelling Prototypes					
	I	II	III	IV	V	VI
HUD MPS Heating Zone	Single Story No Basement	Single Story Full Basement	Double Story No Basement	Double Story Full Basement	Apart-ments	Mobile Homes
1						
2						
3						
4						
5	2.24	2.53	2.45	2.25	3.45	2.25
6	2.21	2.50	2.42	2.23	2.90	2.23
7	2.44	2.75	2.68	2.44	3.26	2.43
8	2.44	2.64	2.68	2.35	3.26	2.43

F. NON-SPACE HEATING/COOLING ENERGY CONSUMPTION/COST

The examples in the preceding sections (VI.C, VI.D and VI.E) dealt with the charges for space heating and cooling. However, to compute **total** energy consumption charges, the costs for energy consumed by lights, equipment, and appliances (Government **and** tenant owned) must be determined and added to the heating and cooling charges.

1. **Consumption**. Electric non-space heating/cooling consumption and cost estimates include electricity used by small appliances, lights, radios, television, refrigerators, ranges, washers, dryers, etc. These items, and their associated consumption levels, are shown in Table 16.

   To use Table 16, first, determine the finished floor space square footage range within which a specific quarters unit falls. Then, using the values in Table 16, add the KwH consumed by each appliance or equipment item which is present in the quarters unit. If a housing unit has more than one (1) refrigerator, freezer, room (window) air conditioner, or space heater, multiply the KwH shown in the table times the number of refrigerators, freezers, room air conditioners, or space heaters that are present in the quarters unit to determine the total monthly KwH consumption for these appliances.

   There may be instances where appliances are fueled by fossil fuels rather than by electricity. Table 16a provides monthly consumption (in MCF or gallons of fuel) for the most common of these.

   If an appliance listed in Table 16 or Table 16a is not present in the quarters unit at issue, do not include its monthly energy consumption when computing the total energy consumed by equipment and appliances.

2. **Cost**. The cost of electricity or fossil fuel consumed by appliances and equipment is easily computed by multiplying the total monthly consumption (as determined in the preceding paragraphs) times the appropriate charge per KwH, MCF or gallon. These unit charges are shown in Table 17.

TABLE 16 MONTHLY KwH USAGE: APPLIANCES AND EQUIPMENT

Appliance/ Equipment	Gross Square Feet of Living Space									
	Under 301	301-500	501-700	701-1,100	1,101-1,300	1,301-1,500	1,501-1,900	1,901-2,100	2,101-2,500	Over 2,500
Hot water heater	130	130	245	245	370	370	480	480	600	705
Stove / Microwave	45	45	50	50	55	55	60	60	65	70
Refrigerator 1/	45	50	50	50	85	85	85	85	85	85
Clothes washer	20	35	35	35	45	45	45	55	55	65
Clothes dryer	15	15	25	25	35	35	35	35	40	50
Dishwasher	35	35	45	45	60	60	70	70	80	95
Freezer 1/	70	70	70	70	70	70	70	70	70	70
Furnace fan	15	15	20	20	20	25	25	30	30	35
Room air conditioner	65	65	65	65	65	65	65	65	65	65
Television / radio	5	5	10	10	20	20	20	20	25	25
Lights	50	55	75	80	90	90	95	100	120	120
Space heater (portable) 1/	130	130	130	130	130	130	130	130	130	130
Misc. small appliances	30	30	45	45	65	65	75	80	95	105
Engine Heaters	195	195	195	195	195	195	195	195	195	195
Hot Tub	360	360	360	360	360	360	360	360	360	360

1/ If more than one of these appliances are present in a quarters unit, multiply the KwH consumption times the number of appliances to determine the total KwH consumed for each appliance category.

NOTE: FOR APPLIANCES OPERATED BY FOSSIL FUELS, SEE TABLE 16a.

TABLE 16a MONTHLY FOSSIL FUEL CONSUMPTION: APPLIANCES AND EQUIPMENT

Gross Square Feet of Living Space

Appliance/ Equipment	Under 301	301-500	501-700	701-1,100	1,101-1,300	1,301-1,500	1,501-1,900	1,901-2,100	2,101-2,500	Over 2,500
Hot water heater										
Natural Gas MCF	.55	.55	1.05	1.05	1.58	1.58	2.05	2.05	2.56	3.01
Propane Gallons	5.61	5.61	10.71	10.71	16.12	16.12	20.91	20.91	26.11	30.70
Fuel oil Gallons	3.87	3.87	7.39	7.39	11.12	11.12	14.43	14.43	18.02	21.19
Kitchen Range										
Natural Gas MCF	.19	.21	.21	.21	.36	36	.36	.36	.36	.36
Propane Gallons	1.94	1.94	2.14	2.14	2.35	2.35	2.65	2.65	2.86	3.06
Fuel oil Gallons	1.34	1.34	1.48	1.49	1.62	1.62	1.83	1.83	1.97	2.11
Refrigerator 1/										
Natural Gas MCF	.19	.21	.21	.21	.36	.36	.36	.36	.36	.36
Propane Gallons	1.94	2.14	2.14	2.14	3.67	3.67	3.67	3.67	3.67	3.67
Clothes dryer										
Natural Gas MCF	.06	.06	.11	.11	.15	.15	.15	.15	.17	.21
Propane Gallons	.61	.61	1.12	1.12	1.53	1.53	1.53	1.53	1.73	2.14
Freezer 1/										
Natural Gas MCF	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30
Propane Gallons	3.06	3.06	3.06	3.06	3.06	3.06	3.06	3.06	3.06	3.06
Space heater (portable) 1/										
Natural Gas MCF	.55	.55	.55	.55	.55	.55	.55	.55	.55	.55
Propane Gallons	5.61	5.61	5.61	5.61	5.61	5.61	5.61	5.61	5.61	5.61
Fuel oil Gallons	3.87	3.87	3.87	3.87	3.87	3.87	3.87	3.87	3.87	3.87

1/ If more than one of these appliances are present in a quarters unit, multiply the consumption times the number of appliances to determine the total consumed for each appliance category.

NOTE: To compute the cost per month for an appliance that is fueled by a fossil fuel, multiply the consumption listed by the unit cost found in Table 17 of this report.

G. WATER AND SEWER CONSUMPTION/COST CALCULATIONS

In accordance with OMB Circular No. A-45 and Departmental policies and guidelines, when utilities are furnished by the Government, charges shall be based upon regional average residential rates and consumption levels applicable to private rental housing in the survey region.

Where regional survey procedures are used to establish base rental rates, *the charges for Government-furnished water and sewer services, must be based upon regional average water and sewer rates*, and *not* the rates prevailing in the nearest Established Community. In determining the regional average rates, the water and sewer rates for each survey community were obtained and averaged.

Thus, where the water service is unmetered, and where the Government furnishes water and sewer services, *including well water and septic waste disposal systems*, the regional average flat rate charges, shown below, shall be used. These charges are based upon (1) the average of the monthly service costs (including taxes, service charges, etc.) in all surveyed communities; and (2) consumption levels (based on numbers of bedrooms) contained in planning guides published by the Department of Housing and Urban Development (HUD). The rates below are based upon the number of bedrooms contained in a dwelling.

Flat Rate Water and Sewer Charges

Number of Bedrooms	Monthly Charges			Total
1 (or less)	$12.00 water	+	$12.00 sewer	= $24.00
2	$15.50 water	+	$12.50 sewer	= $28.00
3	$20.25 water	+	$14.25 sewer	= $34.50
4	$25.00 water	+	$17.00 sewer	= $42.00

H. GOVERNMENT PROVIDED METERED UTILITIES

Where the Government provides the utilities, and the consumption is metered *at the quarters unit level*, the following unit charges will apply.

TABLE 17 UTILITY CHARGES (COST PER UNIT)

Do not calculate the total cost of electricity in steps, such as the first 500 KwH costs so much, then the second 500 KwH costs so much, etc.

a. Electricity

KwH Consumed Per Month	Charge Per KwH
0 - 500	$.084
501 - 1,000	$.076
1,001 - 1,500	$.070
Over - 1,500	$.067

b. Fuel Oil #2 — $0.97 Per Gallon.

c. Propane — $0.77 Per Gallon.

d. Natural Gas — $7.00 Per MCF (1,000 cubic feet).

e. Water

Water Consumed Per Month	Cost Per Gallon
1 – 3,000 Gallons	$0.0057
3,001 - 5,000 Gallons	$0.0038
5,001 - 7,500 Gallons	$0.0029
Over - 7,500 Gallons	$0.0025

f. Sewer

Sewer Consumed Per Month	Cost Per Gallon
1 - 3,000 Gallons	$0.0047
3,001 - 5,000 Gallons	$0.0031
5,001 - 7,500 Gallons	$0.0023
Over - 7,500 Gallons	$0.0019

I. GARBAGE/TRASH REMOVAL SERVICE RATES

In the case of garbage and trash hauling, as with other Government-provided services, OMB Circular No. A-45 requires the charges to be based upon the domestic rates for comparable services provided to occupants of private rental units in the survey area.

The garbage and trash services provided to quarters occupants vary from weekly to daily service. Establishment of a service charge based upon the service in the nearest established community may or may not reflect a similar level of service. Therefore, the charge for garbage and trash collection, when conducted by the Government, will, regardless of quarters type, be **$12.60 per quarters unit per month**.

J. CHARGES FOR APPLIANCES AND RELATED SERVICES

OMB Circular No. A-45 requires agencies to charge occupants of Government quarters for appliances, furnishings and services that the Government provides with the quarters. The charges for appliances, furnishings and services most typically provided by Federal agencies are found in Table 18. The monthly recapture cost of the items in Table 18 were determined from information gathered by contractors in the survey communities of all QMIS regions, and from special studies conducted by the QMIS Program Office.

Agencies providing appliances, furnishings or services that are not included in Table 18 are responsible for establishing an appropriate monthly charge that reflects the private market value of the item(s) provided. In such cases, the agency or bureau should advise the QMIS Program Office to ensure that subsequent regional survey reports include charges for all Government-provided appliances, furnishings and services.

TABLE 18 MONTHLY CHARGES FOR APPLIANCES & RELATED SERVICES

APPLIANCES		SERVICES AND FURNISHINGS	
Range (Gas / Electric) *	(+/-) $3.60	Storage Shed (Per Unit)	$2.55
Refrigerator *	(+/-) $3.30	Furniture (Per Room)	11.50
Clothes Washer	3.60	Swimming Pool	
Clothes Dryer	3.30	Private Pool	60.00
Dishwasher	3.15	Community Pool	20.00
Microwave Oven	1.40	Satellite Dish	17.70
Trash Compactor	3.60	Cable Television	22.90
Freezer	1.90	Premium Channel (Each)	15.40
Freezer (Community)	1.00	Maid Service	67.75
Window Air Conditioner		Lawncare (Per Mowing)	
Refrigerated Unit	4.10	Houses (Excluding Plexes)	20.80
Evaporative (Swamp) Unit	3.05	All Other Classes	10.40
Free Standing Stove	3.65	Snow Removal (Per Removal)	12.30
Fireplace Insert	4.40	Firewood (Per Cord)	126.75
Lawn Mower	3.80		
Hot Tub	33.30	ELECTRIC CREDITS	
		Well pump (0-1 Bedroom)	1.15
Community Laundry		Well pump (2 Bedrooms)	1.80
(Non-Coin Operated)		Well pump (3 Bedrooms)	2.60
Washer Only	1.90	Well pump (4+ Bedrooms)	3.50
Dryer Only	1.60		
Washer and Dryer	3.50	Sewer Lift Pump (0-1 Bedroom)	1.15
		Sewer Lift Pump (2 Bedrooms)	1.15
		Sewer Lift Pump (3 Bedrooms)	1.35
		Sewer Lift Pump (4+ Bedrooms)	1.80
ISOLATION ADJUSTMENT FACTOR	2.80	Base Radio	1.15
		Remote Control Relay	1.15
		Sump Pump	1.15
		Radon Mitigation Fan	10.35

** If the Government provides one range and refrigerator, no additions or deductions are made.*
If the Government does not provide a range or a refrigerator, deduct the amount shown above.

If the Government provides 2 or more ranges or refrigerators, add the amounts shown above for each appliance furnished in excess of one range and one refrigerator

VII. ADMINISTRATIVE ADJUSTMENTS

Once the MBRR is established, certain adjustments (e.g. for isolation and amenity deficiencies) are authorized by OMB Circular No. A-45. These administrative adjustments are established by OMB and are not derived from regional surveys conducted by the QMIS Program Office.

The administrative adjustments contained in OMB Circular A-45, and described below, are not authorized for dormitories, bunkhouses, or transient quarters. This is because the rental rates for those housing classes are administratively established, through extensions of the principle of comparability, and are not based directly upon market comparability.

A. SITE AMENITY ADJUSTMENTS

Living conditions at some Government housing sites are not always the same as those found in the survey communities. In the communities surveyed, the amenities discussed below (and in OMB Circular A-45) are generally present and their contributory value is included in the contract rent and in the quarters MBRR's determined from the tables in this report. Thus, if any amenity listed below is present at the quarters site, no positive adjustment is made for that amenity because its presence has already accounted for in the MBRR. However, the lack of an amenity discussed below represents a less desirable condition that should be reflected as a **negative** percentage adjustment to the quarters MBRR or CPI-adjusted MBRR (CPI-MBRR), whichever is applicable.

1. **Reliability and adequacy of water supply**. The water delivery system at the quarters site should provide potable water (free of significant discoloration or odor) at adequate pressure at usual outlets. If the water delivery system at the quarters site does not meet these conditions, 3 percent should be deducted from the MBRR or CPI-MBRR, whichever is applicable.

2. **Reliability and adequacy of electric service**. Electric service at the quarters site must equal or exceed a 100-ampere power system, and should provide 24-hour service under **normal** conditions. When evaluating the electric service, housing managers are reminded that OMB Circular A-45 recognizes that occasional temporary power outages are considered to be "**normal**" conditions. Furthermore, if an adequate back-up generator is available, then the electric service amenity will be considered to be reliable and adequate regardless of the reliability of the primary power source. When electric service is inadequate and unreliable, 3 percent should be deducted from the MBRR or CPI-MBRR whichever is applicable.

3. **Reliability and adequacy of fuel for heating, cooling and cooking.** There should be sufficient fuel storage capacity to meet prevailing weather conditions and needs. Where electricity is used as the heating, cooling or cooking "fuel," an adjustment can only be made when a deduction has been made for deficient electric service (see paragraph VII.A.2, above). If the fuel delivery/storage system is inadequate, 3 percent should be deducted from the MBRR or the CPI-MBRR, whichever is applicable.

4. **Reliability and adequacy of police protection**. Law enforcement personnel, including Government employees with law enforcement authority, should be available on a 24-hour basis. OMB Circular A-45 defines "**availability**" as the ability of law enforcement officers to respond to

emergencies at the quarters site as quickly as a law enforcement officer in the nearest established community could respond to an emergency in the nearest established community.

OMB Circular A-45 further provides that where part-time officers serve the quarters site, the fact that the officers are part-time does not necessarily mean that they are less available than officers in the nearest established community. The important point is that the availability determination must be based on comparative response times (quarters site vs. the nearest established community) - not the employment conditions of the officers serving the quarters site.

Finally, OMB Circular A-45 provides that gaps in availability due to temporary illness or injury, use of annual leave, temporary duties, training, or other short absences, do not render law enforcement personnel "unavailable" at the quarters site.

If, after applying these guidelines, it is determined that the law enforcement protection at the quarters site is unreliable and inadequate in comparison to the reliability and adequacy of law enforcement protection in the nearest established community, 3 percent should be deducted from the MBRR or CPI-MBRR, whichever is applicable.

5. **Fire insurance availability or reliability and adequacy of fire protection**. Fire insurance should be available (for the quarters) with the premium charge based upon a rating equal to the rating available to comparable housing located in the nearest established community. Alternatively, adequate equipment, an adequate supply of water (or fire retardant chemical), and trained personnel should be available on a 24-hour basis to meet foreseeable emergencies. OMB Circular A-45 provides that **if either element is present (adequate insurance or an adequate fire fighting capability), no adjustment is authorized**. If both elements are missing, 3 percent should be deducted from the MBRR or CPI-MBRR, whichever is applicable.

6. **Reliability and adequacy of sanitation service**. An adequately functioning sewage disposal system and a solid waste disposal system should be available. OMB Circular A-45 considers septic, cesspool or other systems adequate even though they may require periodic maintenance, as long as they are usable during periods of occupancy. If the sanitation service at the quarters site is unreliable or inadequate, 3 percent should be deducted from the MBRR or CPI-MBRR, whichever is applicable.

7. **Reliability and adequacy of telephone service**. Access to commercial telephone facilities should be available on a 24-hour basis. Deductions (except as provided below) are not allowed for occasional temporary interruptions of telephone service. OMB Circular A-45 allows specific deductions for various levels of service and privacy. These are explained below.

   a. The MBRR or CPI-MBRR (whichever is applicable) should be reduced by 3 percent if telephone service is not available within the quarters or within 100 yards of the quarters.

   b. The MBRR or CPI-MBRR (whichever is applicable) should be reduced by 2 percent if there is no telephone service within the quarters, but telephone service (either private or party line) is available within 100 yards of the quarters.

c. The MBRR or CPI-MBRR (whichever is applicable) should be reduced by 1 percent if telephone service is available in the employee's quarters, but the service is not private line service and/or the service is not accessible on a 24-hour per day basis.

8. **Noise and odors**. If there are frequent disturbing or offensive noises and/or odors at the quarters site, 3 percent should be deducted from the MBRR or CPI-MBRR, whichever is applicable.

9. **Miscellaneous improvements**. One or more of the following improvements should be available at the quarters site: paved roads/streets, sidewalks or street lights. If any one of these improvements is present, no deduction is authorized. If all three of these improvements are missing (i.e., there are no paved roads/streets **and** there are no sidewalks, **and** there are no street lights), 1 percent should be deducted from the MBRR or CPI-MBRR, whichever is applicable.

B. ISOLATION ADJUSTMENT

In some cases, Government quarters are located far from the nearest established community (see paragraph IX.C for the OMB's definition of "established community"). In addition, different modes of transportation (travel categories) may serve to further isolate the quarters from the nearest established community. In situations where the quarters location and the travel categories meet the requirements contained in OMB Circular A-45, an isolation adjustment should be applied. To determine whether an isolation adjustment applies, and the amount of the adjustment (if one does apply), you should follow the steps in the Isolation Adjustment Computation Schedule, shown on the following page. This schedule is a (modified) reproduction of the appendix to OMB Circular A-45, and is included in this report for illustrative purposes, only. Therefore, you should use the form prescribed by your agency or bureau when documenting the isolation adjustment.

Isolation Adjustment Computation

- *Step 1.* Determine the one-way distance in miles (from the quarters to the nearest established community) for each category of transportation listed in Figure 1. Enter mileage(s) in the appropriated block(s) under Column B.

- *Step 2.* Multiply mileage figures entered in Column B by point values listed in Column A for each affected category of transportation to produce one-way points for each category. Add 29 points to the category 4 subtotal and 27 points to the category 5 subtotal to reflect relative differences in cost or time by use of these modes of travel.

- *Step 3.* Add all categories of one-way points in Column C to produce one-way points. (The total must exceed 30 points or there is no adjustment for isolation.)

Figure 1

Category of Travel	Column A Point Value		Column B One-way Miles			Column C One-way Points
(1) Paved road or rail	1.0	X	____	=		____
(2) Unpaved but improved road	1.5	X	____	=		____
(3) Unimproved road	2.0	X	____	=		____
(4) Water, snowmobile, pack animal, foot or other special purpose conveyance	2.5	X	____	=	____+29	____
(5) Air	4.0	X	____	=	____+27	____
TOTAL ONE-WAY POINTS				=		____

- *Step 4.* Calculate the Isolation Adjustment Factor (IAF) using the following OMB formula: Multiply 2 (to reflect round-trip points) by 4 (to reflect number of trips per month) and then multiply by $x.xx (GSA's current automobile allowance as of the last day of September of each year). For example, the GSA mileage allowance, as of September 30, 2001, was $0.345 per mile, resulting in a IAF of 2.80.

ISOLATION ADJUSTMENT FACTOR = 2.80

- *Step 5.* Multiply total adjusted points by the Isolation Adjustment Factor to produce the monthly adjustment for isolation (rounded to the nearest whole dollar).

MONTHLY ADJUSTMENT = _____

C. LOSS OF PRIVACY

Some quarters occupants are subject to a loss of privacy during non-duty hours by virtue of **public visits which occur several times daily**. In other cases, quarters occupants may be **inhibited from enjoying the full range of activities normally associated with living in private rental housing** (such as where restrictions are imposed on activities in quarters at national cemeteries, or where quarters are in view of prison inmates). In such cases, OMB Circular A-45 allows a deduction from the MBRR or CPI-MBRR (whichever is applicable) of up to 10 percent. OMB Circular A-45 instructs housing managers to establish proportional adjustments to reflect situations of less frequency or seriousness in their impact upon privacy or usage, or to reflect seasonal variations.

D. EXCESSIVE OR INADEQUATE SIZE

Quarters occupants are sometimes provided dwellings that are excessively large or small for their needs. This may be because the range and variety of quarters available at an installation may be much less than that which is available in private rental markets. In such cases, OMB Circular A-45 allows a deduction from the MBRR or the CPI-MBRR (whichever is applicable) of up to 10 percent. The Circular instructs that the deduction should be in direct proportion to the degree of excess or inadequacy, and that the deduction must not continue beyond one month after suitable quarters are made available. Before this adjustment is applied, local housing managers should consult with managers within their agencies or bureaus to determine whether other alternatives (such as closing off rooms and other excess space) would offer a more suitable means of adjustment.

E. LIMITATIONS TO ADMINISTRATIVE ADJUSTMENTS

Administrative adjustments cannot be applied without limit. OMB Circular A-45 provides that the MBRR or CPI-MBRR cannot be reduced by more than 50 percent unless an isolation is authorized and applied. For quarters which receive an isolation adjustment, the MBRR or CPI-MBRR may not be reduced by more than 60 percent. These limitations do not apply to excessive heating or cooling adjustments, which are described in paragraph IX.A of this report.

VIII. CONSUMER PRICE INDEX ADJUSTMENTS

OMB Circular A-45 requires annual verification, and adjustment (when necessary) of the following rental components that are presented in this report: (1) the Monthly Base Rental Rates (MBRR's); (2) the charges for related facilities (utilities, appliances, furnishings and services); and (3) the Isolation Adjustment Factor (IAF). These verifications and adjustments are to be made, essentially, in each interim year between baseline regional surveys.

Generally, OMB Circular A-45 specifies that these changes are to be based upon September index levels of specified components of the Consumer Price Index (CPI); and the GSA temporary duty mileage allowance in effect as of September 30, of each year. These changes must be implemented at the beginning of the first pay period in March of each following year.

The QMIS Program Office is responsible for determining the amounts of these changes, and for providing QMIS Program participants with the information, the software and the instructions needed to implement the required changes. This information is usually distributed to each National Quarters Officer in November of each year. National, regional or installation quarters managers (as required by your agency or bureau) are responsible for implementing these annual rental adjustments.

IX. OTHER OMB CIRCULAR A-45 RENT CONSIDERATIONS

A. EXCESSIVE HEATING OR COOLING COSTS

OMB Circular A-45 authorizes a deduction from the Monthly Base Rental Rate (MBRR) or the Consumer Price Index - adjusted Monthly Base Rental Rate (CPI-MBRR), whichever is applicable, when quarters are unusually costly to heat or cool. This adjustment is allowed only when (1) the excessive heating or cooling costs are due to the poor design of the quarters or the lack of adequate insulation/weather-proofing; and (2) when the energy/fuel used for heating and/or cooling is metered. This adjustment will vary from quarters-to-quarters, but is the difference between the actual heating and/or cooling costs paid by the quarters occupant and 125 percent of the cost of heating and/or cooling a comparable (but adequately constructed and insulated) dwelling located in the same climate zone. For more information on this adjustment, you should consult your agency or bureau policies.

B. INCREMENTAL ADJUSTMENTS

New baseline regional surveys or annual CPI adjustments may occasionally increase quarters rents by more than 25 percent. When this occurs, OMB Circular A-45 allows housing managers to impose the increase incrementally over a period of not more than one year. The Circular also requires that such increases must be applied in equal increments on at least a quarterly basis.

C. ESTABLISHED COMMUNITY

OMB Circular A-45 has established the following minimum standards for use in determining which population centers (cities, towns, etc.) may be used as "established communities" when determining quarters rents.

1. An established community must have a year-round population of 1,500 or more (5,000 or more in Alaska). The population determinations must be based upon the most recently conducted decennial census.

2. An established community must have at least one doctor and one dentist, who are available to all quarters occupants on a non-emergency basis.

3. An established community must have a private rental market with housing available to the general public. This requirement excludes communities on military posts, Indian reservations and other Government installations which may meet the other criteria contained in paragraphs IX.C.1 and 2, above.